



# TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

## MEETING MATERIALS

January 7, 2010

CALTRANS

BAY AREA TOLL AUTHORITY

CALIFORNIA TRANSPORTATION COMMISSION





## *Letter of Transmittal*

**TO:** Toll Bridge Program Oversight Committee  
(TBPOC)

**DATE:** December 30, 2009

**FR:** Program Management Team (PMT)

**RE:** TBPOC Meeting Materials Packet – January 7, 2010

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Herewith is the TBPOC Meeting Materials Packet for the January 7<sup>th</sup> meeting. The packet includes memoranda and reports that will be presented at the meeting. A Table of Contents is provided following the Agenda to help locate specific topics.

**TBPOC MEETING**  
**January 7, 2010, 10:00 am – 2:00 pm**  
**Mission Bay Office, 325 Burma Road, Oakland, CA**  
**TBPOC - PMT pre-briefing, 10:00 am – 11:00 am**  
**TBPOC meeting, 11:00 am – 2:00 pm**

<b>Topic</b>	<b>Presenter</b>	<b>Time</b>	<b>Desired Outcome</b>
<b>1. CHAIR'S REPORT</b>	S. Heminger, BATA	5 min	Information
<b>2. TBPOC/ ABF/ TYLMN Discussion</b> a. Self-Anchored Suspension Superstructure Mitigation and Acceleration Update	PMT	75 min	Information
<b>3. CONSENT CALENDAR</b> a. TBPOC Conference Call Minutes: 1) December 1, 2009 Conference Call Minutes* 2) December 4, 2009 Conference Call Minutes*  b. Contract Change Orders (CCOs): 1) Yerba Buena Island Detour CCO 128-S1 (Waterline Design Modifications)*	A. Fremier, BATA A. Fremier, BATA  D. Noel, CTC	1 min 1 min  1 min	Approval Approval  Approval
<b>4. PROGRESS REPORTS</b> a. Final Monthly Progress Report December 2009** b. Draft TBSRP 4 <sup>th</sup> Quarter 2009 Project Progress and Financial Update/ Annual Progress Report 2009**	A. Fremier, BATA A. Fremier, BATA	2 min 5 min	Approval Approval
<b>5. PROGRAM ISSUES</b> a. TBSRP Capital Outlay Support Update*	A. Banani, CT	15 min	Information
<b>6. SAN FRANCISCO-OAKLAND BAY BRIDGE UPDATES</b> a. Yerba Buena Island Detour 1) Update 2) S-Curve Update  b. Yerba Buena Island Transition Structures No. 1 1) Update 2) Budget Approval*  c. Oakland Touchdown No. 1 1) Update	T. Anziano, CT T. Anziano, CT  T. Anziano, CT T. Anziano, CT  T. Anziano, CT	5 min 5 min  5 min 10 min  5 min	Information Information  Information Approval  Information
<b>7. EYEBAR REPAIR UPDATE</b>	B. Maroney, CT	10 min	Information
<b>8. ANTIOCH/ DUMBARTON SEISMIC RETROFIT CONTRACTS</b> a. Delivery Schedule Updates*	M. Pazooki, CT J. Weinstein, BATA	15 min	Approval
<b>9. OTHER BUSINESS</b>			

**Next TBPOC Meeting: February 11, 2010, 10:00 AM – 1:00 PM**  
**Mission Bay Office, 325 Burma Road, Oakland, CA**

\*Attachments

\*\*Stand-alone document included in the binder

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### **TBPOC MEETING January 7, 2010**

<b>INDEX TAB</b>	<b>AGENDA ITEM</b>	<b>DESCRIPTION</b>
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<b>2</b>	<b>2</b>	<b>TBPOC/ ABF/ TYLMN Discussion</b> a. Self-Anchored Suspension Superstructure Mitigation and Acceleration Update
<b>3</b>	<b>3</b>	<b>CONSENT CALENDAR</b> a. TBPOC Conference Call Minutes 1) December 1, 2009 Conference Call Minutes* 2) December 4, 2009 Conference Call Minutes*  b. Contract Change Orders (CCOs) 1) Yerba Buena Island Detour CCO 128-S1 (Waterline Design Modifications)*
<b>4</b>	<b>4</b>	<b>PROGRESS REPORTS</b> a. Final Monthly Progress Report December 2009** b. Draft Fourth Quarter 2009 Project Progress and Financial Update/ Annual Progress Report 2009**
<b>5</b>	<b>5</b>	<b>PROGRAM ISSUES</b> a. TBSRP Capital Outlay Support (COS) Update*
<b>6</b>	<b>6</b>	<b>SAN FRANCISCO-OAKLAND BAY BRIDGE UPDATES</b> a. Yerba Buena Island Detour 1) Update 2) S-Curve Update  b. Yerba Buena Island Transition Structures No. 1 1) Update 2) Budget Approval*  c. Oakland Touchdown No. 1 1) Update
<b>7</b>	<b>7</b>	<b>EYEBAR REPAIR UPDATE</b>
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<b>9</b>	<b>9</b>	<b>OTHER BUSINESS</b>

\*Attachments

\*\*Stand-alone document included in the binder



## **ITEM 1: CHAIR'S REPORT**

No Attachments

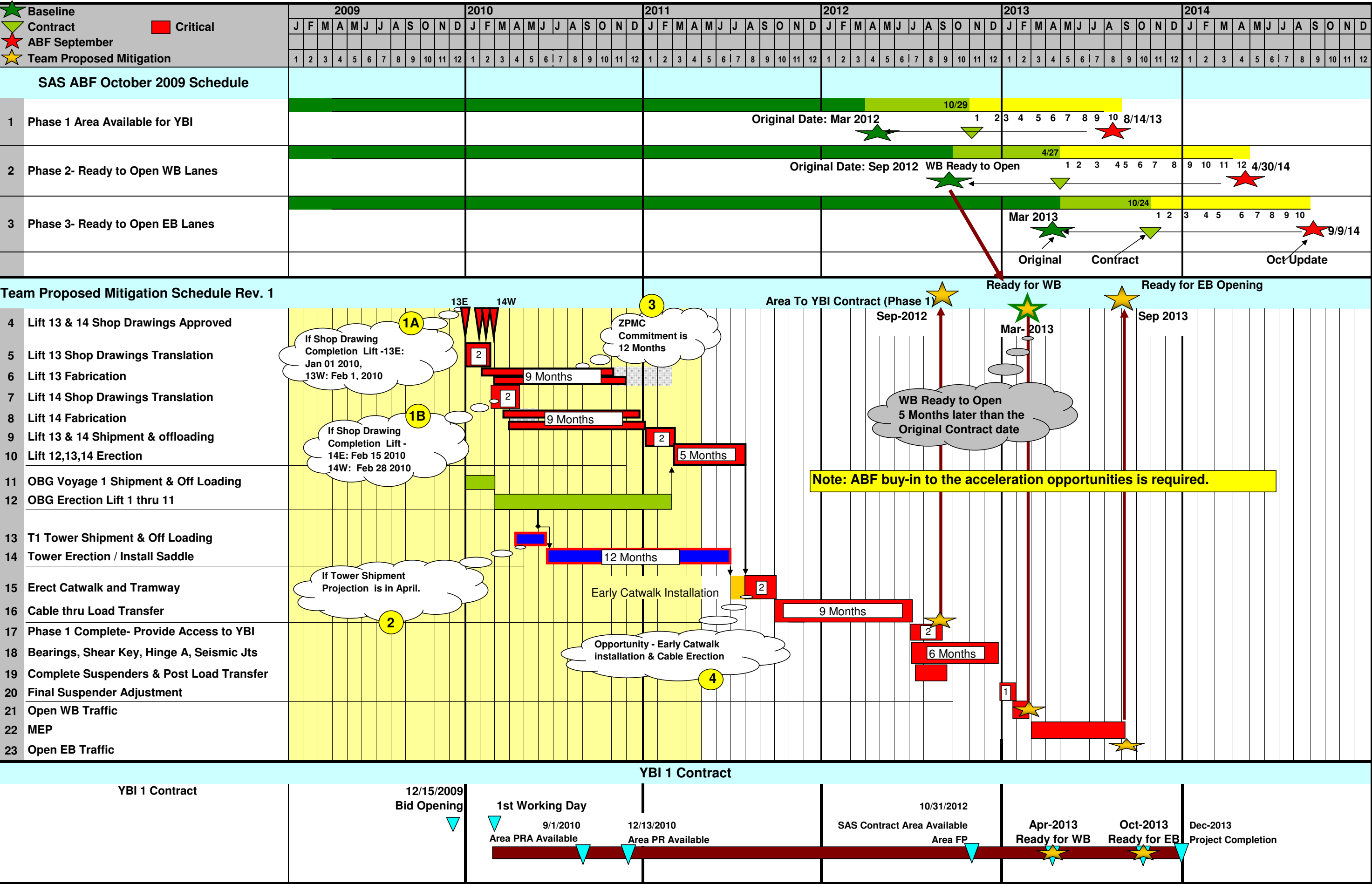
## **ITEM 2: TBPOC/ ABF DISCUSSION**

- a. SAS Mitigation and Acceleration Update

Attachment: Draft Rev 1 – SAS Project Schedule  
Mitigation Workplan

DRAFT Rev 1- SAS Project Schedule Mitigation Workplan

November 23- 2009



## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 30, 2009

**FR:** Andrew Fremier, Deputy Executive Director, BATA

**RE:** Agenda No. - 3a1  
Consent Calendar  
Item- TBPOC December 1, 2009 Conference Call Minutes

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**Recommendation:**  
**APPROVAL**

**Cost:**  
N/A

**Schedule Impacts:**  
N/A

**Discussion:**  
The Program Management Team has reviewed and requests TBPOC approval of the December 1, 2009 Conference Call Minutes.

**Attachment(s):**  
December 1, 2009 Conference Call Minutes





# TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

## CONFERENCE CALL MINUTES December 1, 2009, 5:30 PM – 7:00 PM

**Attendees:** TBPOC Members: Steve Heminger and Bimla Rhinehart  
PMT Members: Andrew Fremier and Stephen Maller  
Participants: Sri Balasubramanian, Michele DiFrancia, Mike Forner, John Goodwin, Beatriz Lacson, Peter Lee, Effie Milionis, Dina Noel, Bijan Sartipi, Ken Terpstra, and Jason Weinstein

Convened: 5:35 PM

Items	Action
<b>1. CHAIR'S REPORT</b> <ul style="list-style-type: none"><li>None.</li></ul>	
<b>2. TBPOC / ABF / TYLMN Discussion</b> <ul style="list-style-type: none"><li>SAS Mitigation and Acceleration Update</li><li>Not discussed.</li></ul>	
<b>3. CONSENT CALENDAR</b> <ul style="list-style-type: none"><li>TBPOC Meeting/ Conference Call Minutes<ol style="list-style-type: none"><li>September 18, 2009 Conference Call Minutes</li><li>October 16, 2009 Meeting Minutes</li><li>October 28, 2009 Conference Call Minutes</li><li>November 5, 2009 Meeting Minutes</li><li>November 13, 2009 Conference Call Minutes</li><li>November 17, 2009 Conference Call Minutes</li></ol></li><li>TBPOC 2010 Revised Meeting Calendar<ul style="list-style-type: none"><li>The Chair exhorted members to determine calendar conflicts early on so that meetings can be rescheduled</li></ul></li></ul>	<ul style="list-style-type: none"><li>The TBPOC <b>APPROVED</b> all consent calendar items, as presented, with instruction to revise the October 16, 2009 Meeting Minutes as follows:<ul style="list-style-type: none"><li>Show the following action item for agenda item 5a, "J. Tapping to remove the out-of-scope items from the Risk Management reporting process."</li></ul></li></ul>

(continued)

Items	Action
<p>as soon as possible.</p> <ul style="list-style-type: none"><li>c. FHWA 2009 Annual Update to the Financial Plan</li><li>d. Contract Change Orders (CCO's)<ul style="list-style-type: none"><li>1) Yerba Buena Island Detour CCO 119, S2 (SWPPP) \$850,000</li></ul></li><li>• Upon query, D. Noel explained that the CCO is to pay for maintenance of best management practices onsite through the winter of 2010/2011.</li></ul>	
<p><b>4. PROGRESS REPORTS</b></p> <ul style="list-style-type: none"><li>a. Draft Monthly Progress Report November 2009</li><li>• A. Fremier presented the draft Monthly Progress Report November 2009 for TBPOC approval. The report is scheduled for release on December 2, 2009.</li></ul>	<ul style="list-style-type: none"><li>• The TBPOC <b>APPROVED</b> the Monthly Progress Report November 2009, as presented.</li></ul>
<p><b>5. SAN FRANCISCO-OAKLAND BAY BRIDGE (SFOBB) UPDATES</b></p> <ul style="list-style-type: none"><li>a. Yerba Buena Island Detour<ul style="list-style-type: none"><li>1) Update</li><li>• Not discussed.</li></ul></li><li>2) S-Curve Update<ul style="list-style-type: none"><li>• Not discussed.</li></ul></li><li>b. Yerba Buena Island Transition Structures (YBITS) No. 1<ul style="list-style-type: none"><li>1) Update</li><li>• Not discussed.</li></ul></li><li>c. Oakland Touchdown (OTD) No. 1<ul style="list-style-type: none"><li>1) Update</li><li>• Not discussed.</li></ul></li></ul>	
<p><b>6. EYEBAR REPAIR UPDATE</b></p> <ul style="list-style-type: none"><li>• A. Fremier and M. Forner gave a brief update on the eyebar repair project.</li></ul>	

**(continued)**

Items	Action
<ul style="list-style-type: none"><li>• A. Fremier raised the subject of payment for transit agency costs for the unplanned bridge closure for the eyebar repair in the approximate amount of \$350,000.</li></ul>	<ul style="list-style-type: none"><li>• Prepare a memo request for TBPOC approval at the next conference call between now and December 9.</li></ul>
<b>7. OTHER BUSINESS</b> <ul style="list-style-type: none"><li>• The Chair gave an overview of the format of the TBPOC presentation to the BATA Oversight Committee (OC) on December 9.<ul style="list-style-type: none"><li>○ B. Rhinehart agreed with the suggested approach.</li><li>○ Discussion of the presentation was tabled for another conference call when all TBPOC members can be present.</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Schedule another TBPOC conference call before December 9 to review the TBPOC presentation to the BATA OC and discuss other agenda items not covered in today's conference call.</li></ul>

Adjourned: 6:02 PM

**CONFERENCE CALL MINUTES**  
December 1, 2009, 5:30 PM – 7:00 PM

**APPROVED BY:**

\_\_\_\_\_  
**STEVE HEMINGER**, Executive Director  
Bay Area Toll Authority

\_\_\_\_\_  
Date

\_\_\_\_\_  
**RANDELL H. IWASAKI**, Director  
California Department of Transportation

\_\_\_\_\_  
Date

\_\_\_\_\_  
**BIMLA G. RHINEHART**, Executive Director  
California Transportation Commission

\_\_\_\_\_  
Date

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 30, 2009

**FR:** Andrew Fremier, Deputy Executive Director, BATA

**RE:** Agenda No. - 3a2  
Consent Calendar  
Item- TBPOC December 4, 2009 Conference Call Minutes

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**Recommendation:**  
**APPROVAL**

**Cost:**  
N/A

**Schedule Impacts:**  
N/A

**Discussion:**  
The Program Management Team has reviewed and requests TBPOC approval of the December 4, 2009 Conference Call Minutes.

**Attachment(s):**  
December 4, 2009 Conference Call Minutes





# TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

## CONFERENCE CALL MINUTES

December 4, 2009, 3:45 PM – 4:45 PM

**Attendees:** TBPOC Members: Steve Heminger, Randy Iwasaki, and Bimla Rhinehart  
PMT Members: Tony Anziano, Andrew Fremier, and Stephen Maller  
Participants: Mike Forner, Beatriz Lacson, Rick Land, Peter Lee, Brian Maroney, Effie Milionis, Dina Noel, Bijan Sartipi, Jon Tapping, and Jason Weinstein

Convened: 3:52 PM

Items	Action
<p><b>1. CCO'S 108, S1 AND 123, S1 - UPDATE</b></p> <ul style="list-style-type: none"><li>• T. Anziano reported that the CCO's are in the hands of ABF for action. Except for the question of what is included and what is not in the CCO 108, S1 memorandum, the CCO's which were approved by the TBPOC on November 17, 2009, are on track.<ul style="list-style-type: none"><li>○ It was suggested that the Department do what needs to be done to get the CCO's executed by Tuesday, December 8.</li></ul></li></ul>	<ul style="list-style-type: none"><li>• T. Anziano will follow up with M. Flowers to expedite ABF approval of the CCO's by December 8, 2009.</li></ul>
<p><b>2. EYEBAR REPAIR UPDATE</b></p> <ul style="list-style-type: none"><li>• R. Iwasaki and T. Anziano gave an update on the eyebar repair project.<ul style="list-style-type: none"><li>○ To date, there is no approved schedule for the eyebar repair project. Approval is anticipated by Monday, December 7.</li><li>○ S. Heminger, the Chair, suggested that a media alert on the approved schedule be held off until the BATA OC meeting on December 9 when a press conference is scheduled.</li><li>○ At A. Fremier's request, R. Iwasaki indicated that he will make the Department's draft</li></ul></li></ul>	<ul style="list-style-type: none"><li>• R. Iwasaki to apprise the other TBPOC members if a schedule is approved on Monday, December 7, or earlier.</li><li>• R. Iwasaki to advise S. Heminger after his meeting today re the possibility of waiting until Wednesday, December 9 to alert the media re an approved schedule for the eyebar repair project.</li></ul>

**(continued)**

Items	Action
<p>press release available and asked that it be kept confidential.</p> <ul style="list-style-type: none"><li>• A. Fremier reported that BATA has been working with regional transit agencies about the level of service they provided during the unexpected Bay Bridge closure for the eyebar repair, for the purpose of reimbursement. The estimated transit and congestion management-related expenses total \$350,000.<ul style="list-style-type: none"><li>○ Federal funding eligibility is being pursued.</li><li>○ If unsuccessful, the amount will become part of the funding request from BATA's Toll Bridge Rehabilitation Program for the long-term eyebar repair.</li></ul></li><li>• The total amount being requested for the eyebar repair project, whether it is \$14 million or \$15 million, was discussed (the former is what Department documents carry and anything different could create an issue).<ul style="list-style-type: none"><li>○ It was noted that the BATA budget shows \$15 million, which is not tied to Department estimates.</li></ul></li></ul>	<ul style="list-style-type: none"><li>• S. Heminger will submit a resolution to the BATA Oversight Committee (OC) on December 9 revising the requested amount for the eyebar repair project to \$14 million, to be consistent with Department figures.</li></ul>
<p><b>3. OTHER BUSINESS</b></p> <ul style="list-style-type: none"><li>• The Chair summarized the format of the TBPOC presentation to the BATA OC on December 9, including the suggested topics that each TBPOC member will talk about.<ul style="list-style-type: none"><li>○ R. Iwasaki indicated that Department protocol dictates that the Director not handle the technical aspects of a presentation and suggested that T. Anziano/J. Tapping cover those pertaining to CCO's 108 and 123.</li></ul></li></ul>	

**(continued)**

Items	Action
<ul style="list-style-type: none"><li>○ BATA will revise the presentation according to the format discussed and agreed to.</li><li>○ A revised version of the presentation will be reviewed by the PMT on Monday, December 7.</li><li>• The Chair raised the UC Berkeley letter issue and asked what the PMT has developed to bring closure to it.</li></ul>	<ul style="list-style-type: none"><li>• The PMT to submit its recommended course of action at the January 7, 2010 TBPOC/PMT pre-briefing.</li></ul>

Adjourned: 4:31 PM

**CONFERENCE CALL MINUTES**  
December 4, 2009, 3:45 PM – 4:45 PM

**APPROVED BY:**

\_\_\_\_\_  
**STEVE HEMINGER**, Executive Director  
Bay Area Toll Authority

\_\_\_\_\_  
Date

\_\_\_\_\_  
**RANDELL H. IWASAKI**, Director  
California Department of Transportation

\_\_\_\_\_  
Date

\_\_\_\_\_  
**BIMLA G. RHINEHART**, Executive Director  
California Transportation Commission

\_\_\_\_\_  
Date

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 30, 2009

**FR:** Dina Noel, Assistant Deputy Director Toll Bridge Program, CTC

**RE:** Agenda No. - 3b1

Item- Consent Calendar

Yerba Buena Island Detour Contract Change Order 128-S1 – Waterline  
Design Modifications

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**Recommendation:**

**APPROVAL**

**Cost:**

CCO 128– S1:            \$242,380.00

**Schedule Impacts:**

None

**Discussion:**

**CCO 128-S1 in the amount \$242,380** is necessary to pay for additional costs incurred due to modifications made to the 12-inch and 4-inch waterlines installed on the detour structure. The original CCO 128, issued for the amount of \$888,538, paid for the initial installation of the lines. The additional \$242,380 will provide for the replacement of 36 thermal expansion joints that failed during testing, a valve and flushing connection added to the 12-inch line, and additional 45-degree and 90-degree elbows necessary to account for unanticipated elevation and alignment differences. Compensation also provides for premium time to install these design modifications and achieve the scheduled Labor Day Weekend opening.

CCO 128 S1 constitutes full and final compensation for all the work associated with these changes.

**Attachment(s):**

1. Draft CCO: 128-S1
2. Draft CCO Memorandum: 128-S1
3. YBID- Implementation Strategy Memo



CONTRACT CHANGE ORDER

Change Requested by: Engineer

CCO 128	Suppl. No. 1	Contract No. 04 - 0120R4	Road SF-80-12.6/13.2	FED. AID LOC.:
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To: CC MYERS INC

You are directed to make the following changes from the plans and specifications or do the following described work not included in the plans and specifications for this contract. **NOTE: This change order is not effective until approved by the Engineer.**

Description of work to be done, estimate of quantities and prices to be paid. (Segregate between additional work at contract price, agreed price and force account.) Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time. This last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate.

Provide for the following changes to the 12 NPS and 4 NPS water lines of the Temporary Bypass Structure (Bridge No. 34-0006 (TEMP)):

- 1) Modify the 12 NPS and 4 NPS water lines as shown on Pages No. 2 through 7 of this change order.
- 2) Install a fire valve and flushing connection to the 12 NPS water line as shown on Sheet No. 8 of this change order.

Adjustment of Compensation at Lump Sum:

Provide compensation to the Contractor for all additional costs incurred due to the changes to the 12 NPS and 4 NPS waterlines provided for under this change order. For these costs, the Contractor shall be compensated a lump sum of \$242,380.00. This sum constitutes full and final compensation, including all markups, for all outstanding costs associated with the work of this change.

Total Cost of Adjustment of Compensation at Lump Sum .....\$242,380.00

Estimated Cost: Increase ☒ Decrease ☐ \$242,380.00

By reason of this order the time of completion will be adjusted as follows: 0 days

Submitted by		
Signature	Resident Engineer BILL CASEY	Date

Approval Recommended by		
Signature	SFOBB Construction Manager MIKE FORNER	Date

Engineer Approval by		
Signature	SFOBB Construction Manager MIKE FORNER	Date

We the undersigned contractor, have given careful consideration to the change proposed and agree, if this proposal is approved, that we will provide all equipment, furnish the materials, except as may otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefor the prices shown above.

NOTE: If you, the contractor, do not sign acceptance of this order, your attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.

Contractor Acceptance by		
Signature	(Print name and title)	Date

CONTRACT CHANGE ORDER MEMORANDUM

TO: MIKE FORNER / DEANNA VILCHECK			FILE: E.A. 04 - 0120R4	
FROM: BILL CASEY			CO-RTE-PM SF-80-12.6/13.2	
FED. NO.				
CCO#: 128	SUPPLEMENT#: 1	Category Code: CHPV	CONTINGENCY BALANCE (incl. this change) \$43,959,346.59	
COST: \$242,380.00 INCREASE <input checked="" type="checkbox"/> DECREASE <input type="checkbox"/>			HEADQUARTERS APPROVAL REQUIRED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
SUPPLEMENTAL FUNDS PROVIDED: \$0.00			IS THIS REQUEST IN ACCORDANCE WITH ENVIRONMENTAL DOCUMENTS? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
CCO DESCRIPTION: Waterline Design Mods and Impact Costs			PROJECT DESCRIPTION: CONSTRUCT ROUTE 80 TEMP BYPASS STRUCTURE	
Original Contract Time: 475 Day(s)	Time Adj. This Change: 0 Day(s)	Previously Approved CCO Time Adjustments: 1600 Day(s)	Percentage Time Adjusted: (including this change) 337 %	Total # of Unreconciled Deferred Time CCO(s): (including this change) 0

THIS CHANGE ORDER PROVIDES FOR:

Design modifications to the 12 NPS and 4 NPS water lines.

This project was awarded in March 2004 to construct a detour that will allow for the tie in of the new east span of the San Francisco Oakland Bay Bridge to Yerba Buena Island. The detour encompasses three main structures, the East Tie-In to the existing bridge, the West Tie-In (WTI) to Yerba Buena Island and the Viaduct structure between the two tie ins.

Two separate Department strategy memorandums, dated December 14, 2006 and December 25, 2006, approved by Tony Anziano - Toll Bridge Program Manager and Richard Land - Chief Engineer, recommended that the Department assume responsibility for the designs of the East Tie-In (ETI) and West Tie-In (WTI) portions of this contract, and incorporated seismic retrofit work of the permanent Yerba Buena Island Transition Structure (YBITS) onto this project. The approval of these strategy memorandums extended the project completion date approximately 5 years.

The original Change Order No. 128 provided for the installation of both a 12-inch and 4-inch diameter water line that spans the Viaduct and East Tie-In structures. Project Development has now issued revised plan sheets that modify certain aspects of the waterline design. The major design modification provides for the removal of the expansion bellows on the thermal expansion joints of both water lines after these bellows failed during pressure testing of the lines. The expansion bellows are being replaced by pipe spools with grooved couplings. Eighteen expansion joints are affected on each of the water lines.

Design modifications also add a valve and flushing connection to the 12-inch line and additional 90-degree and 45-degree elbows are required to account for elevation and alignment differences that weren't recognized under the original plan sheets. Lesser design modifications concern clarifications of specific nut and bolt types and provide for specific pipe clearances that must be maintained.

This change order provides compensation for the costs associated with the design modifications being provided along with any impact costs associated with these design changes. The bulk of the costs are associated with the replacement of the 36 each thermal expansion joints and the installation of the additional 90-degree and 45-degree elbows.

Compensation for these modifications to the water lines shall be paid as an adjustment of compensation at an agreed lump sum price of \$242,380.00 which shall be financed from the contract's contingency funds. A cost analysis is on file.

No adjustment of contract time is warranted as the change will not affect the controlling operation.

This change was concurred with by Alec Melkonians - Asst. Project Manager, Minh B. Nguyen - Project Engineer, and Lina Ellis - Maintenance.

**CONTRACT CHANGE ORDER MEMORANDUM**

EA: 0120R4 CCO: 128 - 1

DATE: 12/10/2009 Page 2 of 2

<b>CONCURRED BY:</b>			<b>ESTIMATE OF COST</b>										
Construction Engineer:	Jeannie Balderramos	Date 12/14/09	THIS REQUEST		TOTAL TO DATE								
Bridge Engineer:		Date	ITEMS	\$0.00	(\$598,600.00)								
Project Engineer:	Minh B. Nguyen, PE	Date	FORCE ACCOUNT	\$0.00	\$0.00								
Project Manager:	Alec Melkonians	Date	AGREED PRICE	\$0.00	\$1,487,138.43								
FHWA Rep.:		Date	ADJUSTMENT	\$242,380.00	\$242,380.00								
Environmental:		Date	<b>TOTAL</b>	<b>\$242,380.00</b>	<b>\$1,130,918.43</b>								
Other (specify):	Lina Ellis, Maintenance	Date	<b>FEDERAL PARTICIPATION</b>										
Other (specify):		Date	<input type="checkbox"/> PARTICIPATING <input type="checkbox"/> PARTICIPATING IN PART <input checked="" type="checkbox"/> NONE <input type="checkbox"/> NON-PARTICIPATING (MAINTENANCE) <input type="checkbox"/> NON-PARTICIPATING										
District Prior Approval By:		Date	FEDERAL SEGREGATION (if more than one Funding Source or P.I.P. type)										
HQ (Issue/Approve) By:	Bob Molera, HQ CCO Engineer	Date	<input type="checkbox"/> CCO FUNDED PER CONTRACT <input type="checkbox"/> CCO FUNDED AS FOLLOWS										
Resident Engineer's Signature:		Date	<table border="0"> <tr> <td>FEDERAL FUNDING SOURCE</td> <td>PERCENT</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> </table>			FEDERAL FUNDING SOURCE	PERCENT	_____	_____	_____	_____	_____	_____
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**Yerba Buena Island Detour, Contract No. 04-0120R4**  
**Contract Change Order Implementation Strategy**  
**December 29, 2009**

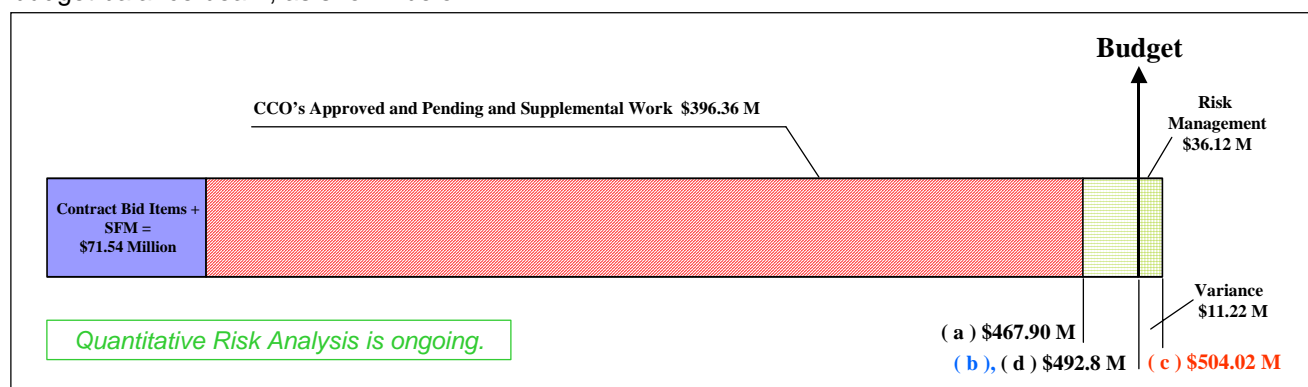
**DRAFT**

Yerba Buena Island Detour (Contract 04-0120R4)			
Contract Award:	March 10 <sup>th</sup> , 2004	Suspension Days:	302 Working Days
Original Working Days:	475 Working Days	Contract Extensions:	1660 Working Days
Original Contract Completion:	July 27th, 2005	Projected Contract Completion:	December 10, 2010

## Introduction

Two memos were developed to outline a strategy for a revised YBID project that enhanced YBID viaduct design, developed tie-in design (east and west) in-house, improved the retrofit of the YBI viaduct (replacing the top deck of the viaduct rather than retrofitting in place) and advanced and incorporated select YBITS foundation work. The two memos are "San Francisco-Oakland Bay Bridge Corridor Schedule Mitigation – Strategy for South-South Detour Contract Completion" issued December 14, 2006, and "Recommendation to Construct Select Yerba Buena Island Transition Structure Foundations by Contract Change Order" issued on December 25, 2006. This strategy will result in substantial increases in the cost of the YBID project.

As approved at the June 2009 TBPOC meeting the revised budget for the YBID project is 492.8M. This figure was established in May 2009 using all available information to date. This figure is within the projects approved budget balance beam, as shown below:



## Scope of Work for YBID

The revisions to the original scope of work currently associated with the Yerba Buena Island Detour Project have been assigned into the following categories with their associated estimated cost:

Category	Scope of Work	Current Budget (June 2009)	In Progress Status Update from June 09 Approved Budget	
			Current	Delta
(0)	Original Bid Items, Baseline CCOs (1 through 48), and State Furnished Materials	\$83.7	\$83.7	\$0
(1)	YBID New Viaduct	\$40.1	\$40.9	\$0.8
(2a)	West Tie-In Existing Viaduct Phase 1	\$40.1	\$40.1	\$0.0
(2b)	West Tie-In Phase 2	\$21.8	\$18.2	(\$3.6)
(3)	East Tie-In	\$140.0	\$143.1	\$3.1
(4)	YBI Transition Structures Advance Foundations	\$104.3	\$103.4	(\$0.9)
(5)	Administrative Issues and General CCOs	\$37.8	\$40.2	\$2.4
<b>Subtotal</b>		<b>\$467.8</b>	<b>\$469.6</b>	<b>\$1.8</b>
<b>Contingency</b>		<b>\$25.0</b>	<b>\$23.2</b>	
<b>Approved Budget</b>		<b>\$492.8</b>		

Contract payments as of December 20, 2009: \$421.4M

As shown, the current status of CCOs required to modify the original scope of the YBID work as defined in Categories 1 through 5 is \$385.9M. The status of each category of work is discussed in the succeeding pages of this report.



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**Bid Items, Baseline CCOs, & State Furnished Material**

**0**

The break down of Category (0) is as follows:

Original Contract Amount	\$ 71.2 million
Baseline CCOs (1 through 48)	\$ 12.1 million
State Furnished Materials	\$ 0.4 million
<b>Total</b>	<b>\$ 83.7 million</b>

**Baseline Contract Change Orders (1 through 48)**

CCO #	Description	Executed Date	Cost	CCO #	Description	Executed Date	Cost
1	Flagging and Traffic Control	5/13/2004	\$100,000.00	24S1	Read Inclinometer/Adjust Equipment Costs	10/18/2005	\$29,782.99
1S1	Additional Funds for Flagging and Traffic Control	2/9/2007	\$200,000.00	24S2	Temporary Suspension Partially Extended	5/2/2006	\$4,812,631.58
2	Bidder Compensation	5/8/2004	\$1,575,000.00	24S3	Contract Days Extension/TRO Compensation	Voided	N/A
3	Partnering	9/7/2004	\$25,000.00	25	Bent 48, 49R, 52R Outside Boundary	3/24/2005	(\$19,000.00)
4	DRB	9/7/2004	\$100,000.00	26	Bent 48 Articulation	4/22/2005	\$0.00
5	Federal Trainee Program	11/12/2004	\$20,000.00	27	Bent 52L Footing Conflict	1/19/2006	\$94,386.51
5S1	Non-Journey Person Training	3/10/2005	\$50,000.00	28	Hydroseed Around W2 Columns	3/24/2005	\$20,000.00
6	Removal of DBE/SBE Monitoring	2/10/2005	\$0.00	29	Replacement of Surveillance Camera	3/24/2005	\$3,542.00
7	Sampling and Analysis Work	8/30/2004	\$30,000.00	30	Additional Elastic Response Analysis	5/31/2005	\$10,700.00
8	SWPPP Maintenance Sharing	8/30/2004	\$75,000.00	31	Soil Analysis Outside Plan Limits	6/27/2005	\$20,000.00
9	Additional Photo Survey/Public Relations	9/14/2004	\$50,000.00	32	SFPUC Permit Specification Change	5/17/2005	\$0.00
10	Temporary Shuttle Van Service	7/16/2004	\$650,000.00	33	Design Enhancements	Voided	N/A
10S1	Additional Funds for Temporary Shuttle Van Service	6/23/2005	\$100,000.00	34	Pole Structure Welding Specification Revision	9/30/2005	\$0.00
10S2	Additional Funds for Temporary Shuttle Van Service	1/12/2007	\$500,000.00	35	Revision of East Tie-In Design Criteria	Voided	N/A
11	Utility Potholing	9/14/2004	\$100,000.00	36*	Extend Limits of Viaduct Demolition	Voided	N/A
12	Just-In-Time Training (RSC Pavement)	2/10/2005	\$5,000.00	37	4 Hr Emergency Travel Way	Voided	N/A
13	PMIV Document Management System	11/3/2004	\$486,743.50	37S1	Emergency Travel Way Falsework	Voided	N/A
14	Temporary Suspension	5/19/2004	\$0.00	38	Revision of West Tie-In Design Criteria	8/4/2005	\$0.00
15	Archaeology Investigation	7/19/2004	\$30,000.00	39	Provide Shuttle Service to USCG	6/27/2005	\$10,000.00
15S1	Additional Funds for Archaeology Investigation	4/22/2005	\$15,000.00	40	Sewer Pipe Material Change	9/26/2005	\$1,561.95
16	Roadway Profile at WTI	Voided	N/A	41	Bent 49L Utility Relocation	Voided	N/A
17	Modify Drainage at G4 Entry Vault	10/24/2006	\$108,217.45	42	Bent 48R Pile Load Test	9/12/2005	\$20,000.00
18	Access Control Measures	9/8/2004	\$50,000.00	42S1	Bent 52R Pile Load Test	12/15/2005	\$5,000.00
19	EDR1 Alignment Modification	5/12/2005	\$0.00	43	Material On Hand Specification Change	9/16/2005	\$75,953.88
20	A490 Bolts	10/23/2006	\$0.00	43S1	Addition of YBITS Advance to Material On Hand	Voided	N/A
21	Removal /Disposal of Stairway	4/13/2005	\$14,060.00	44	Electrical Call Box Relocation		\$47,480
22	Clean Stairs and Walkways	5/24/2005	\$35,000.00	45	Additional SWPPP	2/21/2006	\$250,000.00
22S1	Additional Funds for Cleaning Stairs and Walkways	11/24/08	\$25,000.00	46	Southgate Road Reopening	3/8/2006	\$50,000.00
23	Shared Field Data System (ShareArchive)	Voided	N/A	47	Hazardous/Non-Hazardous Soil Removal	12/15/2005	\$100,000.00
24	East and West Tie-In Temporary Suspension	2/1/2005	\$2,181,467.40	48	Buried Man-Made Objects	12/15/2005	\$50,000.00
<b>Total for Baseline Contract Change Orders</b>							<b>\$12,107,527</b>

- The scope of work for CCO No. 36 was completed and compensated for under the larger scope of CCO No. 76.

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**SSD New Viaduct**

**1**

Progress of Work

Fabrication of the structural steel truss took place at Dongkuk S&C in South Korea. With the placement of traffic onto the detour, the construction of the Viaduct is substantially complete. Minor punch list work remains.

Status of Contract Change Orders: YBID New Viaduct:

CCO	Method of Payment	Description	HQ Status	TBPOC Status	CCO Status	Current Estimate/ Actual Cost	Change from June 09 Approved Budget
49	LS	Stringer and Floor Beam Design Study	N/A	N/A	Executed 5/2/2006	\$109,183	
49S1	FA	Truss Design Modifications (Changes to Stringer and Floor Beam Connections)	I&A 12/08/06	N/A	Executed 8/17/2006	\$150,000	
49S2	FA		I&A 12/08/06	N/A	Executed 12/18/2006	\$100,000	
Subtotal (CCO #49 and Supplements)						\$359,182	
50	FA	Stand Alone Viaduct Design	N/A	N/A	Executed 5/8/2006	\$325,000	
50S1	FA		I&A 9/21/06	N/A	Executed 10/16/2006	\$300,000	
50S2	FA		I&A 12/08/06	N/A	Executed 12/18/2006	\$100,000	
50S3	FA		I&A 2/09/07	N/A	Executed 2/13/07	\$175,000	
Subtotal (CCO #50 and Supplements)						\$900,000	
54	LS	Deck Drainage	N/A	N/A	Executed 5/2/07	\$8,000	
55	LS	Viaduct Fabricator Change (SGT Closeout)	I&A 7/08/07	Approved 6/27/07	Executed 8/7/07	\$5,665,330	
55S1	LS	SGT Fabrication Closeout - Dongkuk Materials	I&A 1/24/08	Approved 3/5/08	Executed 3/17/08	\$980,600	
59	LS	Water Blast Rebar Cages	N/A	N/A	Executed 2/22/07	\$5,000	
59S1	LS	Additional funds, Water Blast Rebar Cages	N/A	N/A	Executed 11/24/08	\$5,000	
60	LS	Construction of Bent Caps	I&A 6/13/07	Approved 6/27/07	Executed 6/18/07	\$7,435,950	
67	FA	Viaduct/ETI Interface Modifications (Design Cost)	I&A 5/14/07	N/A	Executed 9/27/07	\$800,000	
79	LS	Fabrication Cost for Viaduct Design Changes July '05 - October '06	I&A 7/19/07	N/A	Executed 8/7/07	\$803,400	
79S1	LS	Fabrication Cost for Viaduct Design Changes - July 05-Oct 06	I&A 6/13/08	N/A	Executed 8/4/08	\$75,860	
80	LS	Erection Costs for Viaduct Design Changes through October 2006	N/A	Approved 1/31/08	Executed 2/20/08	\$6,912,200	
82	FA	OGAC Paving and Expansion Dams	I&A 8/10/09	N/A	Executed 10/8/09	\$547,680	\$401,386
213	LS	Bent 48 Expansion Joint & Drainage Escalation	I&A 7/23/09	N/A	Executed 8/06/09	\$488,100	
85	LS	Design of 300mm Waterline Relocation	N/A	N/A	Executed 3/17/08	\$12,480	
87	LS	Viaduct Shipping Escalation Costs	I&A 7/24/07	N/A	Executed 10/2/07	\$534,570	
87S1	LS	Viaduct Shipping Escalation Costs	I&A 1/14/08	N/A	Executed 1/30/08	\$200,000	
88	LS	Viaduct Fabrication Delays	I&A 7/19/07	N/A	Executed 8/7/07	\$954,460	
88S1	LS	Viaduct Fabrication Delays	I&A 8/22/07	N/A	Executed 9/27/07	\$776,630	
98	FA/LS	Viaduct Steel Storage and Handling Cost	I&A 5/30/08	N/A	Executed 6/18/08	\$845,370	
99	LS	Viaduct Erection Costs (Post Oct. 2006)	I&A 4/17/08	N/A	Executed 5/22/08	\$862,614	

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100	FA	Viaduct Fabrication Costs (Post Oct. 2006)	I&A 1/22/08	N/A	Executed 1/28/08	\$650,000	
105	FA/LS	Dongkuk Fabrication and Temp Bracing Fabrication Costs (July 2007 Plans)	I&A 4/2/08	Approved 4/3/08	Executed 4/17/08	\$2,140,640	
106	-	CCO Voided...previous scope of work was incorporated into CCO 105	-	-	-	-	-
107	LS	Furnish and Drive Erection Tower Falsework Piles	I&A 8/07/08	N/A	Executed 10/02/08	\$855,190	
111	FA/LS	USCG Parking Replacement and Protection	N/A	N/A	Executed 3/17/08	\$163,223	
111S1	LS	Additional costs USCG Parking Lot	N/A	N/A	Executed 6/30/08	\$8,940	
111S2	LS	Additional costs USCG Car Port Canopy	N/A	N/A	Executed 4/23/09	\$120,000	\$120,000
111S3	LS	Additional costs USCG Car Port Canopy	N/A	N/A	Executed 9/21/09	\$80,000	\$80,000
115	FA	Third VIA Shipping for CCO #67 July 07 plans	I&A 5/06/08	N/A	Executed 5/22/08	\$850,000	
128	LS	60% of Waterline Relocation and Viaduct Connection Modifications	I&A 8/18/09	N/A	Executed 10/8/09	\$533,123	(\$138,039)
128S1	LS	<b>60 % of Waterline Design Mods and Impact Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>In progress</b>	<b>\$145,428</b>	
215	FA	Underground Waterline Excavation Costs	N/A	N/A	Executed 10/8/09	\$47,000	
133	-	Lightweight Conc. Mix Design Spec Change	N/A	N/A	Executed 9/12/08	\$0	
134	LS	60% of Project Wide Electrical Changes	7/7/09	Approved 5/7/09	Executed 8/25/09	\$1,380,554	
196	LS	Revised Electrical Lighting	N/A	N/A	Executed 7/28/09	\$35,944	(\$174,056)
135	LS	Rebar Deck Escalation Costs	I&A 11/09/08	N/A	Executed 1/28/09	\$995,100	
136	FA/LS	Provide additional alternate entrance access to USCG Base	N/A	N/A	Executed 9/23/08	\$74,540	
138	LS	Waterline Relocation for Fire Hydrant (Conflicts with Span 49 Falsework)	N/A	N/A	Executed 9/23/08	\$278,200	
148	FA	USCG Road Canopy below Viaduct	I&A 8/27/08	N/A	Executed 9/23/08	\$500,000	
152	LS	Relocate USCG Road for steel erection FW Towers at Span 51	I&A 1/06/09	N/A	Executed 2/4/09	\$336,420	
156	LS	Span 49 F/W Conflict w/ USCG Utilities	N/A	N/A	Executed 9/23/08	\$180,820	
163	LS	Viaduct Grade Conflict	N/A	N/A	Executed 6/12/09	\$83,202	(\$16,798)
173		<b>Deck Casting and Expansion Joint Escalation</b>		<b>TBD</b>	<b>In Progress</b>	<b>\$1,000,000</b>	
178	LS	Type 7 Fence at Barrier	I&A 7/31/09	N/A	Executed 8/25/09	\$457,356	\$374,176
198	Credit/LS	60 % of Job Wide Stripping Plan (Viaduct Portion)		N/A	Executed 12/14/09	\$179,678	\$89,678
199	Credit	CCO Deleted	-	-	-	-	(\$100,000)
201	LS	Viaduct Steel Erection USCG Protective Netting	N/A	N/A	Executed 10/8/09	\$156,350	(\$73,650)
209	LS	Viaduct USCG Flagging & Delays (Span 51)	N/A	N/A	Executed 8/13/09	\$92,810	(\$47,190)
210	LS	<b>Steel Erection Close Out</b>	<b>N/A</b>	<b>N/A</b>	<b>In Progress</b>	<b>\$147,230</b>	<b>\$22,230</b>
226		<b>Manhole Covers</b>	<b>N/A</b>	<b>N/A</b>	<b>In Progress</b>	<b>\$50,000</b>	<b>\$50,000</b>
235	FA	<b>1/3<sup>rd</sup> of Detour Traffic Improvements</b>	<b>N/A</b>	<b>N/A</b>	<b>In Progress</b>	<b>\$100,000</b>	<b>\$100,000</b>
238	FA	<b>Additional Scuppers</b>	<b>N/A</b>	<b>N/A</b>	<b>In Progress</b>	<b>\$100,000</b>	<b>\$100,000</b>
<b>Current Forecast for YBID New Viaduct</b>						<b>\$40,914,175</b>	<b>\$787,737</b>

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Budget Status

The Viaduct portion of the YBID was bid at \$26.74M. The projected additional costs in the December 14, 2006 Strategy Memorandum were estimated to be \$9M. The June 2009 revised additional cost estimate is \$40.1M with a current projection of \$40.9M. CCOs executed to date are \$39.3M.

**West Tie-In**

**Phase 1**

**2a**

Progress of Work

Phase 1 work was substantially complete with the move in of the Structure on September 03, 2007. Miscellaneous electrical and drainage work remain. WB On-ramp reopened on August 8, 2008 and was subsequently re-closed on September 8, 2009 to accommodate the demolition of the old structure.

Status of Contract Change Orders: West Tie-In Existing Viaduct (Phase 1)

CCO	Method of Payment	Description	HQ Status	TBPOC Status	CCO Status	Current Estimate/ Actual Cost	Change from June 09 Approved Budget
58	FA	Bridge Removal Plan	N/A	N/A	Executed 11/21/06	\$60,000	
58 S1	FA	Bridge Removal Plan	N/A	N/A	Executed 7/05/07	\$40,000	
61	FA	Advance Engineering (Work Plans and Submittals), Site Prep (Ramp Closures, Access Road), Civil Work (Grading), Structure Work (Material Procurement)	I&A 1/09/07	N/A	Executed 2/27/07	\$400,000	
61S1	LS/FA	Construction of Stage 1 Area and Substructure	I&A 5/16/07	Approved 6/27/07	Executed 5/18/07	\$9,995,644	
66	FA	TMP – Video Equipment (WTI Phase 1)	N/A	N/A	Executed 7/20/07	\$175,000	
68	FA	Temporary Electrical Work	N/A	N/A	Executed 7/20/07	\$140,000	
68S1	FA	Temporary Electrical Work Stage 2, 3 & 4	I&A 12/02/07	N/A	Executed 10/31/07	\$510,000	
72	LS	Structure Work (Superstructure), and Temporary Shuttle Service	I&A 7/19/07	Approved 7/27/07	Executed 7/20/07	\$11,096,900	
76	LS	Labor Day Bridge Demolition and Move-In	I&A 7/19/07	Approved 7/27/07	Executed 7/20/07	\$2,240,300	
76S1	LS	Labor Day Bridge Move-In (Changeable Message Signs, Temporary Signs, Traffic Control, Bridge Removal, Bridge Move-In, Paving and Roadway Repairs, CCM Support Costs, City Traffic Officers)	I&A 8/28/07	Approved 8/24/07	Executed 9/27/07	\$10,144,140	
84	LS	Skid Track Foundations and Temporary Columns	I&A 7/27/07	Approved 7/27/07	Executed 7/31/07	\$3,980,000	
101	LS	Reconstruct Slab, West Bound On-ramp	I&A 4/02/08	N/A	Executed 4/17/08	\$846,140	
101S1	LS	WB Onramp Supplemental Work	I&A 1/06/09	N/A	Executed 2/4/09	\$149,560	
102	FA	Northside Drainage Work	N/A	N/A	Executed 4/4/08	\$60,000	
102S1	LS	Northside Drainage Work	N/A	N/A	Executed 7/15/09	\$48,818	
102S2	FA	Additional Northside Drainage Work	N/A	N/A	Executed 7/15/09	\$50,000	
103	LS	Labor Day Weekend Closure Misc. Costs	N/A	N/A	Executed 2/20/08	\$173,140	
<b>Current Status for West Tie-In (Phase 1)</b>						<b>\$40,109,642</b>	<b>\$46,578</b>

Budget Status

The projected additional costs in the December 14, 2006 Strategy Memorandum were estimated to be \$40M. The June 2009 revised additional cost estimate is \$40.1M with a current projection of \$40.1M. CCOs executed to date are \$40.1M.

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**West Tie-In**

**Phase 2**

**2b**

Progress of Work

With the placement of traffic onto the detour, Frames 1, 2, and 3 are substantially complete. Minor punch list work, including the installation of south side drainage system, remains.

Status of Contract Change Orders: West Tie-In (Phase 2)

CCO	Method of Payment	Description	HQ Status	TBPOC Status	CCO Status	Current Estimate/ Actual Cost	Change from June 09 Approved Budget
62	LS	Construction of Phase 2 Foundations and Credits for Elimination of Bid Items 12 and 90	I&A 2/29/08	Approved 4/4/08	Executed 4/7/08	(\$4,649,850)	
200	FA	Shoring at Abutment 47A	N/A	N/A	Executed 11/19/09	\$50,000	(\$250,000)
71	LS	WTI Phase 2 Pile at Bent 46L/Slab Bridge Removal	I&A 7/24/07	N/A	Executed 7/20/07	\$384,130	
108	LS	Substructure	I&A 6/20/08	Approved 6/18/08	Executed 6/25/08	\$5,378,800	
117	FA	Surface Drainage (Southside)	N/A	N/A	Executed 1/6/09	\$150,000	
128	LS	20% of Waterline Relocation and Stringer Stiffeners	I&A 8/18/09	N/A	Executed 10/8/09	\$177,708	<b>\$71,654</b>
<b>128S1</b>	<b>LS</b>	<b>20 % of Waterline Design Mods and Impact Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>In progress</b>	<b>\$48,476</b>	
134	LS	20% of Project Wide Electrical Changes	7/7/09	Approved 5/7/09	Executed 8/25/09	\$460,185	
196	LS	Revised Electrical Lighting	N/A	N/A	Executed 7/28/09	\$11,981	(\$58,019)
141	LS/FA	Superstructure Construction	I&A 11/13/08	Approved 11/18/08	Executed 11/25/08	\$13,200,000	
141S1	ACUP	Superstructure Construction Completion Incentive (Release of Frame 1 Bent Cap FW)	I&A 5/15/09	Approved 5/15/09	Executed 5/15/09	\$1,500,000	
143	LS/ID	Civil Work (EB Onramp and Mainline)	I&A 6/11/09	N/A	Executed 7/28/09	\$156,436	<b>(\$3,618,566)</b>
<b>143S1</b>	<b>LS</b>	<b>Roadway AC Overrun</b>	<b>N/A</b>	<b>N/A</b>	<b>In Progress</b>	<b>\$62,249</b>	
161	LS	T7-Line Detour	I&A 11/10/08	N/A	Executed 11/25/08	\$403,965	
<b>168</b>		<b>Superstructure Design Modifications</b>		<b>TBD</b>	<b>In Progress</b>	<b>\$500,000</b>	
198	Credit/ LS	20% of Job Wide Stripping Plan (WTI Phase 2 Portion)		N/A	Executed 12/14/09	\$59,893	(\$10,212)
202	--	WTI K-rail Deletion and ETI K-rail plans	N/A	N/A	Executed 11/4/09	(\$42,000)	(\$42,000)
220	LS	Flashing Becons and Additional Tunnel Lighting	N/A	N/A	Executed 11/19/09	\$198,000	\$198,000
221	FA	Barrier Rail Transition Cover Plate at B47		N/A	Executed 12/15/09	\$25,000	\$25,000
<b>235</b>	<b>FA</b>	<b>1/3<sup>rd</sup> of Detour Traffic Improvements</b>	<b>N/A</b>	<b>N/A</b>	<b>In Progress</b>	<b>\$100,000</b>	<b>\$100,000</b>
<b>Current Status for West Tie-In (Phase 2)</b>						<b>\$18,174,973</b>	<b>(\$3,584,143)</b>

Budget Status

The Contractor's bid price for the West Tie-In was \$9.0M. Based on the Department's December 14, 2006 Strategy Memorandum, the costs associated with the Phase 2 West Tie-In work were estimated to be an additional \$13.0M. The June 2009 revised additional cost estimate is \$21.8M, with a current projection of \$18.1M. CCOs executed to date are \$17.5M.

**East Tie-In**

**3**

Progress of Work

Bent 52A and skid bent foundation design packages were delivered October 2007. ETI design plans for the skid bents and skid beams were delivered March 15, 2008 and truss plans were delivered April 7, 2008.

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Fabrication of the skid bents and skid beams took place at Thompson Metal Fab, Inc. in Vancouver, WA and the fabrication of the truss took place at Stinger Welding Inc. in Coolidge, AZ.

The existing SFPUC sanitary sewer pump station has been relocated with the new pump station up and running. The East Tie-In structure was successfully moved into place and traffic switch onto the detour on September 8, 2009.

Demolition of the old YB-4 span is in progress.

Status of Contract Change Orders: East Tie-In

CCO	Method of Payment	Description	HQ Status	TBPOC Status	CCO Status	Current Estimate/ Actual Cost	Change from June 09 Approved Budget
63	FA	Advance Engineering (Work Plans and Submittals)	I&A 8/22/07	N/A	Executed 9/27/07	\$800,000	
69	LS	Procurement of Pump/Control Panel for Pump Station Relocation	N/A	N/A	Executed 10/10/07	\$111,280	
69S1	LS	Construction for Pump and Control Panel for Relocated Pump Station	I&A 12/19/07	N/A	Executed 3/17/08	\$499,996	
69S2	LS	Sewer Pump Electrical Changes	I&A 2/25/09	N/A	Executed 4/08/09	\$8,953	
92	FA	ETI AT&T Fiber Optic Relocation	N/A	N/A	Executed 12/17/07	\$175,000	
93	LS/FA	Lead Paint Mitigation Existing Truss (Span YB-4)	I&A 2/13/08	N/A	Executed 2/20/08	\$563,725	(\$3)
93S1	LS	Additional Lead Abatement at Span YB-4	I&A 6/8/09	N/A	Executed 6/17/09	\$347,417	
93S2	LS	Additional Platform Rental and Adjustments	I&A 10/5/09	TBD	Executed 10/8/09	\$300,000	\$300,000
104	LS	Pier E-1 Access Towers	N/A	N/A	Executed 1/30/08	\$150,000	
113	LS	Relocate Waterline in Conflict with Northern Skid Bent Footings	N/A	N/A	Executed 3/17/08	\$167,990	
128	LS	20% of Waterline Relocation and ETI Exterior Stringer Stiffeners	I&A 8/18/09	N/A	Executed 10/8/09	\$177,708	(\$128,346)
<b>128S1</b>	<b>LS</b>	<b>20 % of Waterline Design Mods and Impact Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>In progress</b>	<b>\$48,476</b>	
137	LS	Pump station Water Tank Demo	N/A	N/A	Executed 6/26/08	\$114,490	
90	LS	Bent 52A and Skid Bent Footings and Credits for Eliminated Bid Items 10 and 42	I&A 3/26/08	Approved 4/4/08	Executed 4/14/08	\$11,308,380	
97	FA	Bent 52A and Skid Bent Footing's Material Procurement	I&A 11/06/07	N/A	Executed 11/19/07	\$850,000	
121	LS	Construct Stage 1 Soil Nail Wall, Upper East Tie-In area	N/A	N/A	Executed 3/17/08	\$142,670	
121S1	LS	Construct Stage 2 Soil Nail Wall, Upper East Tie-In area	N/A	N/A	Executed 3/18/09	\$518,130	
162	LS	Bent A3 Shoring	I&A 3/30/09	N/A	Executed 4/01/09	\$268,235	
180	LS	Skid Bent Footing Backfill at A4-A6 and B4-B6	I&A 5/20/09	N/A	Executed 6/12/09	\$237,000	
127	FA	RTU – 8 Service Platform	N/A	N/A	Executed 9/03/08	\$75,000	(\$58,019)
134	LS	20% of Project Wide Electrical Changes	7/7/09	Approved 5/7/09	Executed 8/25/09	\$460,185	
196	LS	Revised Electrical Lighting	N/A	N/A	Executed 7/28/09	\$11,981	
129	LS	Skid Bent and Truss Steel Erection	I&A 11/05/08	Approved 11/10/08	Executed 11/25/08	\$14,712,500	<b>\$899,940</b>
129S1	LS	Skid Bent and Truss Steel Erection Acceleration	I&A 3/09/09	Approved 3/5/09	Executed 4/01/09	\$535,000	
129S2	LS	Skid Bent and Truss Steel Erection Incentive	I&A 6/9/09	Approved 6/4/09	Executed 6/17/09	\$1,177,000	
179	LS	ETI Truss Steel Erection Falsework Foundations	I&A 4/20/09	N/A	Executed 4/08/09	\$312,000	

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234	LS	ETI Skid Bent/Beam Erection Interferences and Guy Cables	N/A	N/A	In Progress	\$54,120	
236	LS	ETI Truss L8 North FW Redesign (Burried Man Made Object)	N/A	N/A	In Progress	\$23,940	
181		Skid Bent/Beam and Truss Erection Support		N/A	In Progress	\$500,000	
206	LS	Skid Bent Steel Erection Closeout Costs	N/A	N/A	In Progress	\$176,670	
214	LS	ETI Truss Steel Erection Closeout Costs		N/A	In Progress	\$645,210	
112	FA	Material Procure Skidbent (1532 Tower Legs)	I&A 1/10/08	Approved 2/4/08	Executed 2/19/08	\$2,000,000	
112S1	FA	Material Procure ETI Superstructure	I&A 3/03/08	Approved 3/5/08	Executed 3/17/08	\$8,500,000	
112S2	FA	Material Procure ETI Temporary Bypass Structure	I&A 6/04/08	Approved 6/16/08	Executed 6/25/08	\$3,500,000	
112S3	FA	Material Procure - Additional Funds	I&A 10/31/08	Approved 11/13/08	Executed 11/25/08	\$3,000,000	
112S4	FA	Material Procure - Additional Funds	I&A 7/7/09	Approved 7/15/09	Executed 7/16/09	\$1,500,000	
116	FA/LS	Fabricate Superstructure & Skidbent	I&A 6/04/08	Approved 6/16/08	Executed 8/8/08	\$14,166,180	
116S1	FA/LS	Skidbeam Design Modifications and Shipping Costs	I&A 12/19/08	Approved 12/23/08	Executed 2/3/09	\$1,896,750	\$249,560
116S2	FA/LS	Skidbeam Design Modifications and Shipping Costs	I&A 7/7/09	Approved 7/15/09	Executed 7/16/09	\$300,000	
140	LS	Truss Steel Fabrication	I&A 9/04/08	Approved 9/04/08	Executed 9/23/08	\$10,920,525	
140S1	ACUP	Truss Fabrication Incentive	I&A 6/17/09	Approved 9/04/08	Executed 7/6/09	\$300,000	
166	LS	Skid Bent & Beam Fabrication Acceleration	I&A 12/22/08	Verbal Approval 11/06/08 Approved 12/23/08	Executed 1/28/09	\$2,028,950	
166S1	ACUP	Skid Bent & Beam Fabrication Incentive	I&A 5/15/08	Approved 12/23/08	Executed 5/15/09	\$900,000	
167	LS	TMF – Shop Drawing Delay	I&A 3/16/09	N/A	Executed 5/6/09	\$632,670	
184	LS	Truss Design Modifications and Acceleration Costs (Partial Payment)	I&A 5/20/09	Approved 6/4/09	Executed 6/12/09	\$3,000,000	
184S1	LS	Truss Design Modifications and Acceleration Costs (Partial Payment)	I&A 7/31/09	Approved 8/6/09	Executed 8/11/09	\$4,393,420	
187	FA	Temporary Bracing for Truss Exterior Stringers	N/A	N/A	Executed 7/16/09	\$150,000	
193	LS	Skid Beam Design Modifications	I&A 7/7/09	N/A	Executed 7/16/09	\$256,140	
144	FA	Expansion Joint Mock-up	I&A 8/26/08	N/A	Executed 9/23/08	\$850,000	
144S1	FA	Expansion Joint Fabrication	I&A 2/03/08	Approved 2/5/09	Executed 4/06/09	\$2,900,000	
144S2	-	Revised Expansion Joint Plan Sheets	N/A	N/A	Executed 8/05/09	\$0	\$1,000,000
144S3	FA	Additional Funds for Expansion Joints		Approved 11/5/09	In Progress	\$1,000,000	
231	FA	Expansion Joint Steel Skid Test Plates	N/A	N/A	Executed 12/15/09	\$100,000	\$100,000
233	LS/FA	Expansion Joint Skid Resistant Treatment	N/A	N/A	Executed 11/17/09	\$106,915	\$106,915
149	FA	Bearing Fabrication	I&A 11/03/08	Approved 11/10/08	Executed 11/25/08	\$1,600,000	\$400,000
149S1	FA	Additional FA Funds for Bearing Fabrication / Testing	I&A 10/15/09	N/A	Executed 11/19/09	\$400,000	
153	LS	Concrete Deck and barrier starter steel	I&A 6/23/09	Approved 6/4/09	Executed 7/6/09	\$2,389,940	(\$378,266)
154	LS	East Pile Deduct at BW6, East Pile	N/A	N/A	Executed 9/04/08	(\$400)	
154S1	LS	Pile Anomaly Deduction at A6W & B52A	N/A	Approved 11/13/08	Executed 11/25/08	(\$2,183)	

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160	FA	Existing Truss Retrofit Fabrication	I&A 4/20/09	N/A	Executed 4/08/09	\$350,000	
170	LS	Existing Truss Strengthening Erection YB-4	I&A 7/31/09	N/A	Executed 10/08/09	\$413,600	(\$336,400)
175	LS	Existing Truss Strengthening Erection Stability Bracing at YB 3	I&A 7/22/09	N/A	Executed 8/13/09	\$311,144	(\$188,856)
164	LS	ETI Steel Erection Crane Runway Trestle	I&A 11/20/08	ATP 11/14/08 Approved 12/23/08	Executed 12/6/09	\$2,700,000	
169	LS	Skid Beam Jobsite Handling and Local Transportation Costs	I&A ½/09	Approved 12/23/08	Executed 2/25/09	\$1,095,020	
171	LS	Bridge Roll Out / Roll In	I&A 6/8/09	Approved 6/4/09	Executed 6/17/09	\$10,147,370	(\$328,820)
172	LS	Lead Paint Abatement and Access at YB-3	I&A 12/18/08	N/A	Executed 2/4/09	\$210,450	
174	FA	ETI Steel Barrier Rail Transition Fabrication	I&A 5/20/09	N/A	Executed 6/17/09	\$350,000	\$150,000
174S1	--	ETI Steel Barrier Rail Transition Fabrication Design Changes	N/A	N/A	Executed 11/4/09	\$0	
174S2	FA	ETI Steel Barrier Rail Transition Fabrication	I&A 11/5/09	N/A	Executed 11/4/09	\$150,000	
177	LS	Span YB-4 Demolition	I&A 9/17/09	Approved 9/2/09	Executed 10/12/09	\$11,249,560	\$2,007,276
217	LS	Skid Bent Demolition	I&A 10/14/09	Approved 9/18/09	Executed 11/19/09	\$3,152,900	
212	LS	YB4 Roll Out Cut Free Demolition	I&A 9/2/09	N/A	Executed 10/08/09	\$209,720	
227		<b>ETI Backfill</b>		<b>TBD</b>	<b>In Progress</b>	<b>\$1,000,000</b>	
186	LS	TMP (Lane Closures and CMS)	***	Approved 6/4/09	Executed 8/25/09	\$2,390,910	(\$609,090)
198	Credit/ LS	20% of Job Wide Stripping Plan (ETI Portion)		N/A	Executed 12/14/09	\$59,893	\$11,478
235	FA	<b>1/3<sup>rd</sup> of Detour Traffic Improvements</b>	<b>N/A</b>	<b>N/A</b>	<b>In Progress</b>	<b>\$100,000</b>	<b>\$100,000</b>
	-	<b>ETI OGAC on Bridge Deck</b>		<b>TBD</b>	<b>Future</b>	<b>\$0</b>	
		<b>District work – road signage, stage construction, SWPPP, Temp k-rail, etc</b>		<b>TBD</b>	<b>Future</b>	<b>\$268,125</b>	
204	FA	CCM's Labor Day Support Costs	I&A 7/14/09	Approved 7/15/09	Executed 8/6/09	\$3,500,000	
		Expansion Joint Seal Installation (previously CCO 189)					
		ETI Steel Barrier Rail Transition Installation (previously CCO 190)					
		Stability Bracing at YBI (Previously CCO 175)					
		Bearing Installation (Previously CCO 191)					
		Barrier Rail Installation (CCO 202 transmitted plans)					
204S1	FA	<b>Additional Funds (If needed)</b>		<b>TBD</b>	<b>Future</b>	<b>\$1,400,000</b>	
216	FA	Pier E1 Barrier Rail Supports	N/A	N/A	Executed 10/08/09	\$175,000	\$175,000
225	FA	Steel Double Handling Costs	I&A 9/17/09	N/A	Executed 10/08/09	\$500,000	\$500,000
207	FA	Field Design Modifications Truss – Fabrication (U1, U8, L1, L8)	I&A 7/16/09	N/A	Executed 7/28/09	\$400,000	(\$874,590)
207S1	FA	Additional Funds to Field Design Modifications Truss – Fabrication (U1, U8, L1, L8)	N/A	N/A	Executed 10/27/09	\$100,000	
219	LS	Field Design Modifications Truss – Erection (U1, U8, L1, L8)	I&A 10/8/09	N/A	Executed 11/19/09	\$625,410	
<b>Current Status for East Tie-In</b>						<b>\$143,121,065</b>	<b>\$3,097,779</b>

**Budget Status**

The Contractor's bid price to construct the Contractor's design for the East Tie-In was \$6.0M with an additional \$1.46M to demolish the remaining portion of the ETI YB-4 span. The Department's December 14, 2006 Strategy Memorandum estimated an additional cost of \$34.0M to construct the Department's ETI roll out/roll in design concept. At the time, this estimate was based on minimal design information available. The June 2009



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revised additional cost estimate is \$140.0M, with the current projection at \$143.1M. CCOs executed to date are \$137.9M.

**Yerba Buena Island Transition Structures  
Advance Foundations**

**4**

Progress of Work

The YBITS foundation and column locations being advanced are W3R/L, W4R/L, W5R/L, W6R/L, W7R/L, W7 Ramp and the temporary E.B. onramp abutment.

- W3 3L – substantially completed  
3R – column (2<sup>nd</sup> lift of 2) in progress
- W4 4L – substantially completed  
4R – column (3<sup>rd</sup> lift of 3) in progress
- W5 5L – 75 of 140 piles driven  
5R – driving of shoring piles substantially completed
- W6 6L – substantially completed  
6R North – column (2<sup>nd</sup> lift of 2) in progress  
6R South – substantially completed
- W7 construction of the temporary soil nail wall and soldier pile shoring complete  
7L North – column (2<sup>nd</sup> lift of 2) in progress  
7L South – substantially completed  
7R – column (2<sup>nd</sup> lift of 2) in progress  
Ramp – substantially completed
- EB On-ramp abutment – temporary shoring piles and permanent CIDH piles have been installed

Demolition of the main portion of the old structure (Bent 48 to YB4) is in progress.

Demolition of the old YB-3 span is complete.

Demolition of the old YB-2 span is in progress.

Status of Contract Change Orders: YBI Transition Structures Advance Foundations

CCO	Method of Payment	Description	HQ Status	TBPOC Status	CCO Status	Current Estimate/ Actual Cost	Change from June 09 Approved Budget
64	FA	YBITS W3L Site Prep and Grading and Construct Access Road	N/A	N/A	Executed 1/8/07	\$150,000	
64S1	LS/FA	YBITS W3L Foundation and Column to Splice Zone, Integrated Shop Drawings for W3L, Concrete Washouts, 50% of Flagging, and Traffic Controls	I&A 3/13/07	Approved 2/15/07	Executed 4/4/07	\$5,835,000	
65	FA	Demo Exist Bridge Adv. Planning	N/A	Approved 4/14/08	Executed 4/18/08	\$175,000	\$11,540
65S1	LS	Demolish Exist Bridge (Bent 48 to YB-4)	I&A 4/06/09	Approved 5/7/09	Executed 5/21/09	\$9,227,660	
192	LS	Cable Bracing requires for Demolition of Spans YB-1, YB-2, and YB-3	N/A	N/A	Executed 8/13/09	\$111,540	
229	FA	Maintenance Traveler Salvage	N/A	N/A	Executed 12/14/09	\$100,000	
70	FA	Integrated Shop Drawings for Remaining YBITS Advance Locations (W3R, W4L/R, W5L/R, W6L/R, W7L/R, and W7 Ramp)	I&A 4/04/07	N/A	Executed 5/1/07	\$500,000	
70S1	FA	YBITS Advance – ISD 3R, 4R/L, 5R/L, 6R/L, 7R/L & ramp	I&A 1/17/08	N/A	Executed 1/30/08	\$450,000	
73	LS	YBITS W3R, W4R, W5R/L, W6R/L, and W7 Ramp Foundations and Columns	I&A 10/24/07	Approved 10/30/07	Executed 11/19/07	\$62,958,990	
75	LS	YBITS W7R/L Foundations and Columns	I&A 4/2/08	Approved 4/3/08	Executed 4/14/08	\$13,125,000	(\$739,190)
75S1	LS	Bent W7 Structure Backfill	I&A 7/7/09	Approved 7/15/09	Executed 7/31/09	\$910,810	
241		<b>Bent W7 Drainage Modifications</b>		<b>N/A</b>	<b>In Progress</b>	<b>\$100,000</b>	

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77	LS	YBITS W4L Foundations and Columns	I&A 6/13/07	Approved 7/27/07	Executed 7/20/07	\$7,125,000	
78	FA	Relocation of Sewer Force Main	N/A	N/A	Executed 7/17/07	\$125,057	
94	LS	YBITS Temp. EB Onramp Abutment Piles and Shoring	I&A 5/18/09	N/A	Executed 5/21/09	\$153,593	(\$246,407)
118	FA	Vibration & Elev. Monitoring at W5L	N/A	N/A	Executed 2/20/08	\$50,000	
118S1	FA/LS/ID	Nimitz House vibration monitoring	N/A	N/A	Executed 8/05/08	\$50,050	
120	LS/Credit	CIDH Pile Mitigation Deduct	N/A	N/A	Executed 3/17/08	(\$400)	
124	FA/LS	Seismic Monitoring & Column Grounding	I&A 10/16/08	N/A	Executed 11/25/08	\$353,975	
126	FA	YBITS Excavation / Hazmat Disposal	I&A 4/7/08	Approved 4/3/08	Executed 4/17/08	\$500,000	
145	-	Revised Mass Concrete Spec. (Elimination of requirement from CCO's 73 & 75)	7/22/09	N/A	Executed 8/25/09	\$0	
<b>145S1</b>		<b>Credit for eliminated Mass Concrete Work</b>		<b>TBD</b>	<b>In Progress</b>	<b>(\$500,000)</b>	
147	LS	Add Cost W4R Foundation Construction	N/A	N/A	Executed 7/21/08	\$25,024	
155	FA	Excess Soil Offhaul	I&A 8/13/08	N/A	Executed 9/03/08	\$500,000	
159	LS	Redesign Bent W7 Soil Nail Wall	I&A 11/10/08	N/A	Executed 5/21/09	\$916,280	
165	LS	W7 Soil Nail Wall Delay Costs	I&A 4/20/09	N/A	Executed 4/08/09	\$152,208	
185	FA/ID	HazMat Excavation for Bridge Removal	8/10/09	N/A	Executed 8/25/09	\$106,000	\$106,000
211	LS	Duct Bank Revisions	N/A	N/A	Executed 8/13/09	\$129,152	\$34,772
232	LS/FA	Duct Bank Footing Removal & Drain Rock	N/A	N/A	Executed 11/19/09	\$105,620	
<b>Current Status for YBI Transition Structures Advance Foundations</b>						<b>\$103,435,559</b>	<b>(\$833,285)</b>

Budget Status

The Department's December 25, 2006 Strategy Memorandum estimated the cost to construct Bents W3R/L, W4R/L, W5R/L, W6R/L, W7R/L, and W7 Ramp to be \$107M. In addition, the temporary E.B. onramp abutment shoring was added at a later date with no estimate revision. The Departments December 14, 2006 Strategy Memorandum estimated the additional demolition costs for the existing bridge (Bent 48 through YB-4) to be \$3.5M. The combined estimate for both was \$110.5M. The June 2009 revised additional cost estimate is \$104.3M with a current projection of \$103.4M. Total CCOs executed to date are \$103.8M.

**Administrative Issues General CCOs**

**5**

Progress of Work

Administrative issues that remain on the YBID contract are related to setting project milestones and determining time related overhead resulting from the contract time extensions, escalation costs, the increased scope of work, and other necessary changes to the contract.

The following list of target milestones has been incorporated into the project schedule. This information will be revised as more detailed schedule information is developed.

	Date	Status	Notes
W3L (foundation and column up to splice zone)	March 15 <sup>th</sup> , 2007	Complete	Finished 3/15/07
West Tie-In Phase 1 Viaduct Demo/Roll-In Complete	September 4 <sup>th</sup> , 2007	Complete	Finished 9/04/07
Access to W3R Available to CCM	January 2 <sup>nd</sup> , 2008	Partial access provided	Coordinating access with SAS
Upper East Tie-In Area Available to CCM (Revised October 2008)	December 2009	Partial access provided	Coordinating access with SAS
East Tie-In Roll-Out/Roll-In Complete (Revised October 2008)	September 7 <sup>th</sup> , 2009	Complete	Finished 9/8/09
Project Completion (Revised July 2009)	December 10, 2010		

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The Department has extended TRO compensation at the original contract rate through December 10, 2010. The Contractor has completed a TRO audit. The Department is reviewing this information so that an appropriate TRO adjustment can be negotiated.

The Department continues to pursue a resolution to the remaining NOPC issues. Of the 18 NOPC issues, only three remain outstanding. Of the three it is anticipated that Viaduct CCO #128 will resolve NOPC #6, resolution of the existing structure demolition costs will resolve NOPC #15, and resolution of the TRO costs will resolve NOPC #18.

Status of Contract Change Orders: Administrative Issues

CCO	Method of Payment	Description	HQ Status	TBPOC Status	CCO Status	Current Estimate/ Actual Cost	Change from June 09 Approved Budget
1 S2	FA	Flagging & Traffic Control	N/A	N/A	Executed 12/5/07	\$200,000	
1S3	FA	Flagging & Traffic Control	N/A	N/A	Executed 7/2/08	\$300,000	
1S4	FA/LS	Flagging & Traffic Control	N/A	N/A	Executed 7/9/09	(\$57,580)	(\$57,580)
13S1	FA	PMIV Additional Funds	I&A 3/10/08	N/A	Executed 3/17/08	\$300,000	
39S1	FA	Additional Funds for Shuttle Service to USCG	I&A 3/18/09	N/A	Executed 3/30/2009	\$500,000	
45 S1	LS	Additional SWPPP	I&A 12/14/07	N/A	Executed 1/31/08	\$350,000	
51	LS	NOPC 12 & 13 Resolution	N/A	N/A	Executed 8/17/06	\$25,234	
52	0	Elimination of Contractor's Design of Tie-Ins	I&A 1/19/07	N/A	Executed 3/2/07	\$0	
53	FA	Handling and Storage of Material	I&A 11/06/06	N/A	Executed 12/8/06	\$240,000	
56	LS	Contractor's Design additional cost... Resolved NOPCs 2,3,4,8,9,10,11,14, and 16	I&A 2/20/08	Approved 3/5/08	Executed 3/17/08	\$6,837,310	
57	LS	Demolition of Building 206	N/A	N/A	Executed 10/18/06	\$22,378	
57S1	LS	Remove and Clear Building 254	N/A	N/A	Executed 6/4/07	\$10,572	
66S1	FA	Video/Photo Documentation Services Supplemental Funds	N/A	N/A	Executed 4/14/08	\$200,000	
66S2	FA	Video/Photo Documentation Services Supplemental Funds	I&A 9/17/09	N/A	Executed 9/22/09	\$200,000	
86	LS	Additional Suspension Costs	N/A	N/A	Executed 5/19/08	\$42,764	
91	LS	Contract Days Extension/TRO Compensation to November 08	RPP 8/28/07	TBD	Executed 10/31/07	\$1,818,948	
91 S1	LS	Base Contract TRO Extension to September 1, 2009	I&A 10/25/07	Approved 10/30/07	Executed 11/16/07	\$8,463,159	
91 S2	LS	Base Contract TRO Extension to December 10, 2010	I&A 9/2/09	Approved 7/15/09	Executed 10/08/09	\$5,494,737	
<b>114</b>		<b>Global TRO Adjustment and TRO Audit</b>		<b>TBD</b>	<b>In Progress</b>	<b>\$6,505,263</b>	
96	FA	SWPPP Steep Slope Stabilization Measures	N/A	N/A	Executed 1/4/08	\$190,000	
96S1	FA	Add Funds Shotcrete Slope at Bent 48	N/A	N/A	Executed 7/2/08	\$40,000	
109	FA	MEP Coordination	N/A	N/A	Executed 1/30/08	\$100,000	
110	FA	Geotech. Exploration Pads and Support	N/A	N/A	Executed 2/20/08	\$150,000	
119	FA/LS/ID/UP	Project Wide SWPPP	I&A 4/07/08	N/A	Executed 4/17/08	\$638,939	
119S1	FA	Project Wide SWPPP (Additional Funds)	I&A 9/2/09	N/A	Executed 9/3/09	\$300,000	\$300,000
119S2	FA	Project Wide SWPPP (Additional Funds)	I&A 12/17/09	Approved 12/5/09	Executed 12/21/09	\$850,000	\$850,000

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123	FA	Treasure Island Yard Lot Rental	I&A 4/16/08	N/A	Executed 4/17/08	\$600,000	\$350,000
123S1	FA	Additional Funds for Treasure Island Yard Lot Rental	I&A 10/8/09	N/A	Executed 10/26/09	\$350,000	
125	FA	Project Access Paving	N/A	N/A	Executed 4/04/08	\$150,000	
125S1	FA	Additional Funds, Project Access Paving	I&A 6/12/08	N/A	Executed 6/25/08	\$35,000	
130	LS	Project Retention	I&A 4/07/08	N/A	Executed 4/14/08	\$136,510	
131	FA	Delete Permanent Erosion Control Items	N/A	N/A	Executed 5/6/09	(\$74,502)	
132	LS	Storm Damage Slope Repair (Resolved NOPC 17)	N/A	N/A	Executed 5/23/08	\$23,870	
139	-	Revised ESA's	N/A	N/A	Executed 5/23/08	\$0	
142	FA	Macalla Road Sinkhole Repair	N/A	N/A	Executed 7/18/08	\$150,000	
146	FA	Macalla Road Tree Trimming	N/A	N/A	Executed 7/21/08	\$50,000	
146S1	FA	Add Funds Macalla Road Tree Trimming	N/A	N/A	Executed 11/25/08	\$50,000	
151	-	Public Safety Spec Change (Suspended Load)	N/A	N/A	Executed 9/23/08	\$0	
157	FA	USCG Access Mitigation Stairway Design to Quarters Above		N/A	Executed 1/28/09	\$150,000	
176	FA	Construction Staking	N/A	N/A	Executed 4/08/09	\$100,000	
		<b>Non CCO Charges...COZEPP, lead survey, respirator training</b>			<b>In Progress</b>	<b>\$1,323,000</b>	
<b>182</b>	<b>FA</b>	<b>USCG use parking lots at WTI area Quarters 8</b>		N/A	<b>In Progress</b>	<b>\$300,000</b>	
188	-	Sound Control Requirements, pile driving restrictions (Specification Only)	6/23/09	N/A	Executed 8/25/09	<b>\$100,000</b>	
<b>188S1</b>		<b>Sound Control Impacts to W6 &amp; W7 Pile Driving</b>		<b>N/A</b>	<b>In Progress</b>		
195	FA	USCG Stair Access to Quarters 9 along Goat Slope	7/31/09	N/A	Executed 8/25/09	\$500,000	(\$300,000)
203	LS	SSD Base Camera's	N/A	N/A	Executed 10/08/09	\$196,884	(\$503,116)
208	-	Permanent Gawk Screen on North Side Detour Rail – CCO Deleted				\$0	(\$200,000)
		<b>PIO Office Labor Day Outreach</b>		<b>N/A</b>	<b>In Progress</b>	<b>\$200,000</b>	
		<b>Macalla Road Repairs</b>		<b>N/A</b>	<b>In Progress</b>	<b>\$200,000</b>	
224	FA	Treasure Island Material Storage Yard	I&A 9/17/09	N/A	Executed 10/08/09	\$400,000	\$400,000
230	FA	USCG Shuttle for WB Onramp Closure	I&A10/29/09	N/A	Executed 11/19/09	\$600,000	\$600,000
<b>237</b>	<b>LS</b>	<b>Temporary Trestle Extended Rental</b>		<b>N/A</b>	<b>In Progress</b>	<b>\$250,000</b>	<b>\$250,000</b>
<b>239</b>		<b>Truck accident Clean up(11-9-09)</b>		<b>N/A</b>	<b>In Progress</b>	<b>\$50,000</b>	<b>\$50,000</b>
<b>240</b>		<b>Mainline Night Lane Closures</b>		<b>N/A</b>	<b>In Progress</b>	<b>\$600,000</b>	<b>\$600,000</b>
<b>Current Status for Administrative and General CCOs</b>						<b>\$40,162,486</b>	<b>\$2,339,304</b>

Budget Status

As of June 2009 the revised additional cost estimate for Time Related Overhead, escalation issues, and job wide changes is \$37.8M with the largest estimated cost being attributed to a global TRO adjustment. As Contract Change Orders for these items are negotiated, this estimate will be updated. Costs related to settlement of NOPC issues not captured here will be paid out of the contract contingency.

Total CCOs executed to date are \$30.6M.

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 30, 2009

**FR:** Andrew Fremier, Deputy Executive Director, BATA

**RE:** Agenda No. - 4a  
Progress Reports  
Item- Draft Monthly Progress Report December 2009

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**Recommendation:**

For Information / **APPROVAL** Confirmation

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

Included in this packet is a draft Monthly Progress Report December 2009. By meeting time, the PMT will have approved and issued the final report on January 5 through delegated TBPOC authority and requests TBPOC confirmation of this approval.

**Attachment(s):**

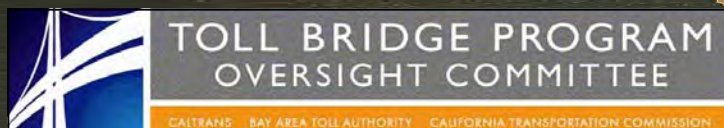
Monthly Progress Report December 2009 ver. 5 (see end of binder)



# **Toll Bridge Seismic Retrofit and Regional Measure 1 Programs**

## **Monthly Progress Report December 2009**

**Draft  
Version 5.0**



**Released: January 2009**





Existing Bridge YB4 Span Demolition in Progress





# TOLL BRIDGE SEISMIC RETROFIT AND REGIONAL MEASURE 1 PROGRAMS

**MONTHLY PROGRESS REPORT  
DECEMBER 2009**



**TOLL BRIDGE PROGRAM  
OVERSIGHT COMMITTEE**

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

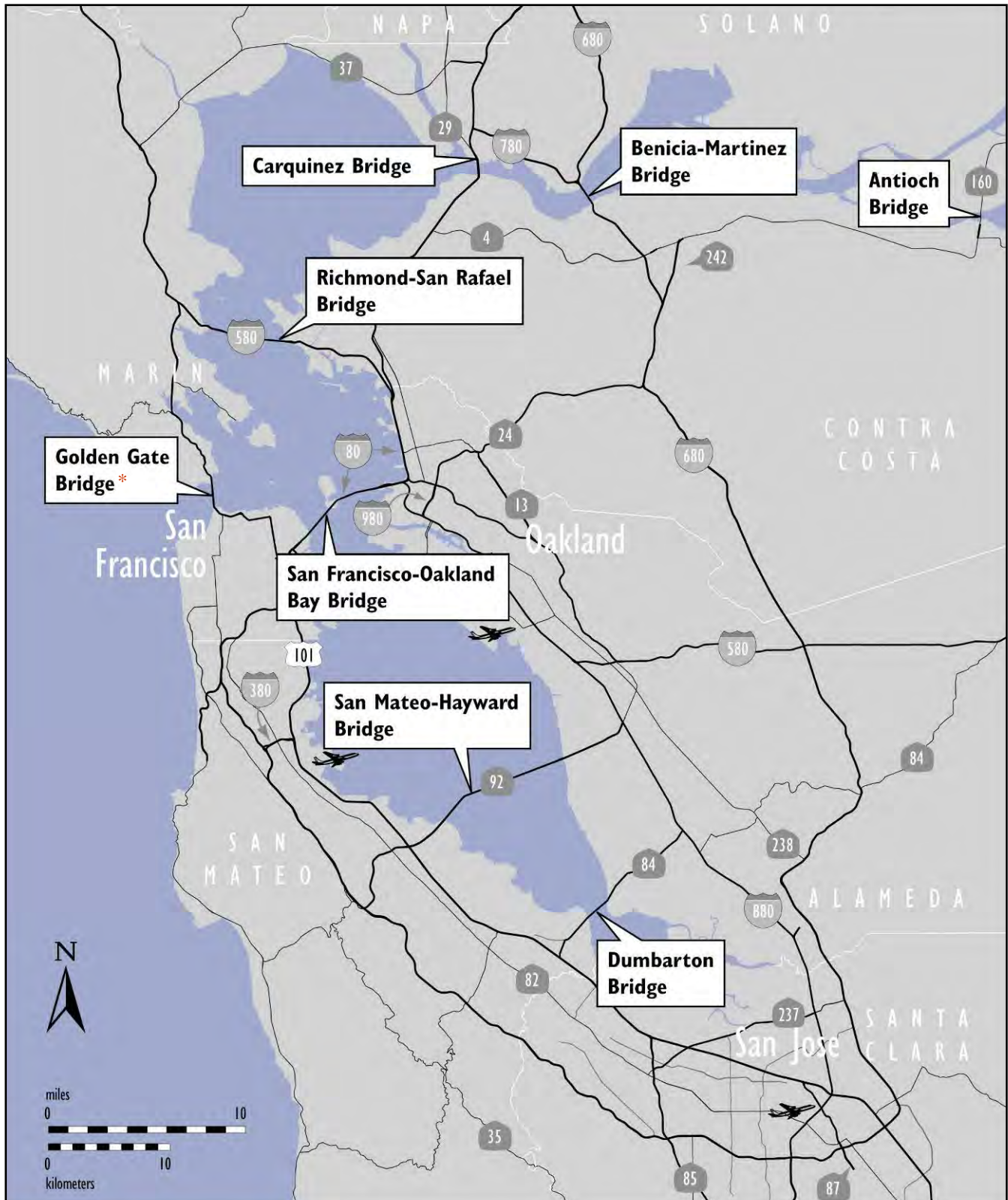




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## Map of Bay Area Toll Bridges



\* The Golden Gate Bridge is owned and operated by the Golden Gate Bridge, Highway, and Transportation District.

## Introduction

In July 2005, Assembly Bill (AB) 144 (Hancock) created the Toll Bridge Program Oversight Committee (TBPOC) to implement a project oversight and project control process for the Benicia-Martinez Bridge and State Toll Bridge Seismic Retrofit Program projects. The TBPOC consists of the Caltrans Director, the Bay Area Toll Authority (BATA) Executive Director and the Executive Director of the California Transportation Commission (CTC). The TBPOC's project oversight and control processes include, but are not limited to, reviewing bid specifications and documents, providing field staff to review ongoing costs, reviewing and approving significant change orders and claims in excess of \$1 million (as defined by the committee) and preparing project reports.

AB 144 identified the Toll Bridge Seismic Retrofit Program and the new Benicia-Martinez Bridge Project as being under the direct oversight of the TBPOC. The Toll Bridge Seismic Retrofit Program includes:

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
San Francisco-Oakland Bay Bridge East Span Replacement	Construction
San Francisco-Oakland Bay Bridge West Approach Replacement	Complete
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit	Complete
San Mateo-Hayward Bridge Seismic Retrofit	Complete
Richmond-San Rafael Bridge Seismic Retrofit	Complete
1958 Carquinez Bridge Seismic Retrofit	Complete
1962 Benicia-Martinez Bridge Seismic Retrofit	Complete
San Diego-Coronado Bridge Seismic Retrofit	Complete
Vincent Thomas Bridge Seismic Retrofit	Complete

The new Benicia-Martinez Bridge is part of a larger program of toll-funded projects called the Regional Measure 1 (RM1) Toll Bridge Program under the responsibility of BATA and Caltrans. While the rest of the projects in the RM1 program are not directly under the responsibility of the TBPOC, BATA and Caltrans will continue to report on their progress as an informational item. The RM1 program includes:

Regional Measure 1 Projects	Open to Traffic Status
Interstate 880/State Route 92 Interchange Reconstruction	Construction
1962 Benicia-Martinez Bridge Reconstruction	Open
New Benicia-Martinez Bridge	Open
Richmond-San Rafael Bridge Deck Overlay Rehabilitation	Open
Richmond-San Rafael Bridge Trestle, Fender & Deck Joint Rehabilitation	Open
Westbound Carquinez Bridge Replacement	Open
San Mateo-Hayward Bridge Widening	Open
State Route 84 Bayfront Expressway Widening	Open
Richmond Parkway	Open



## SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS



SAS Lift 2 in Trial Assembly Area



SAS Tower Lift 1 South and East Shaft Temporary Elevator Being Installed on Heavy Duty Dock

### Toll Bridge Seismic Retrofit Program Risk Management

A major element of the 2005 Assembly Bill 144, the law creating the TBPOC, was legislative direction to implement a more aggressive risk management program. Such a program has been implemented in stages over time to ensure development of a robust and comprehensive approach to risk management. We have reached a milestone with our risk management program with all elements now fully incorporated, resulting in one of the most detailed and comprehensive risk management programs in the country today.

A comprehensive risk assessment is performed for each project in the program. Based upon those assessments, a forecast is developed using the average cost of risk. These forecasts can both increase and decrease as risks are identified, resolved or retired. Nonetheless, we want to ensure that the public is informed of the risks we have identified and the possible expense they could necessitate.

Based upon the Second Quarter 2009 Risk Management Report, we have identified a \$500-\$700 million in risks to the program contingency, which is a slight increase from the last quarter. It is important to note that our \$690 million budgeted program contingency is sufficient to cover the risks to an 80 percent confidence level. We will continue to work on mitigating these risks to reduce the potential draw on contingencies. Further details on identified risks are included in the contract summaries. .

### San Francisco-Oakland Bay Bridge (SFOBB) East Span Seismic Replacement Project

#### SAS Superstructure Contract

The prime contractor constructing the Self-Anchored Suspension Bridge from the completed Skyway to Yerba Buena Island is a joint venture of American Bridge/Fluor (ABF). The primarily steel bridge is being fabricated around the world in components. Temporary steel structures have been and are continuing to be erected in the San Francisco Bay to support the new bridge during construction.

The contractor has reported that fabrication of the steel tower and roadway boxes has fallen 15 months behind schedule due to the complexity of the design and



**SFO Bay Bridge East Span Detour Structure East Tie-In Span Completed over the Labor Day Weekend**

fabrication. The first shipment of roadway boxes (segments 1 through 4) are anticipated by the end of 2009, while the first tower segments are not expected until next year. All components have undergone a rigorous quality review by Shanghai Zhenhua Heavy Industry Co. Ltd. (ZPMC), ABF, and Caltrans to ensure that only bridge components that have been built in accordance to the specifications will be shipped.

On the critical path to completing the bridge is the fabrication of the last two roadway sections at the east end of the new span (Segments 13 and 14). Fabrication of these segments has fallen behind schedule due to delays in the fabrication drawing preparation process. The TBPOC is exploring options to improve review times and communication, including locating additional design staff with shop drawing drafters in Vancouver, Canada. These delays are likely to prevent the westbound opening of the bridge in 2012, but we continue to push for full opening of the bridge in 2013.

Caltrans has established risk management teams to evaluate these challenges and to identify future potential risks to completing the project on time and on budget. In particular, teams are reviewing cable erection plans and mitigation actions. Based on the latest risk management assessment, there is a potential for a \$260 million increase on the SAS contract.

## Yerba Buena Island Detour Contract

The Yerba Buena Island Detour contractor, C.C. Myers, has rolled out the existing bridge span and rolled in the new east tie-in span of the detour structure that diverts traffic off the existing bridge to the detour structure that now ties into the Yerba Buena Island Tunnel. The traffic switch occurred as scheduled on Labor Day weekend. The contractor continues to make progress on a number of accelerated foundations for the future transition structure from the Self-Anchored Suspension (SAS) bridge to the tunnel.

Based on the last completed risk management assessment, which retired 20 million dollars in previously reported risks, there remains a potential for an \$11 million increase for the contract. This assessment is expected to continue; however to decrease next quarter. Remaining risks include unexpected construction challenges during demolition of the old structure. These challenges are being addressed via collaborative on-site meetings between Caltrans and the contractor to actively identify and resolve issues early and at the lowest cost.

On December 15, 2009, Caltrans opened three bids for the Yerba Buena Island Transitions Structures (YBITS) #1 contract. All three bidders submitted bids substantially lower than the engineer's estimate. The apparent low bid was \$80.8 million versus a call-out estimate of \$167 million. Caltrans is checking the bids and will determine the lowest responsive bidder in January 2010.



**SFO Bay Bridge East Side View of YB4 Demolition in Progress**



## SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS



**Oakland Touchdown Falsework Removed**



**Oakland Touchdown Eastbound Hinge Pipe beam Inserted between OTD and Skyway**



**Dumbarton/Antioch Bridges Mock-Up of Dumbarton Pier Columns Undergoing Seismic Testing**

### Oakland Touchdown Contract

In early August, the Oakland Touchdown (OTD) contractor, MCM, continues to be ahead of schedule and has opened construction access on the new westbound OTD structure to the Skyway. Work continues on the eastbound structure.

### TBSRP Capital Outlay Support

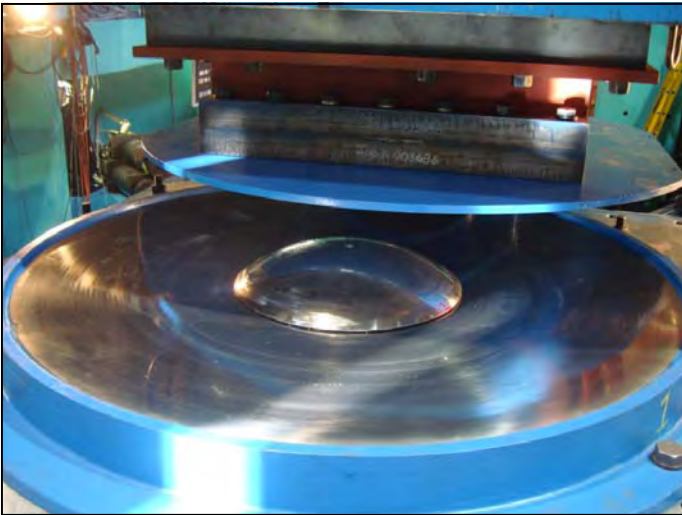
Based on initial discussions with our contractors, early completion of the East Span Project was believed to be possible and sufficient to mitigate potential identified support cost increases. The support cost increases are due primarily to the need to re-advertise the SAS contract and to decisions made to increase our opportunities for early completion of the East Span Project and potential for support cost savings. These decisions include a 12-month schedule extension provided during bid time to attract the maximum number of bidders for the SAS contract and extension of the YBI Detour contract to advance future foundation and column work of the transition structure and west-end deck reconstruction. Since we now judge early completion and the intended cost savings to be unlikely, we forecast a potential drawdown of \$244 million from the program contingency for project support. Further increases in project support costs would be expected if the project is delayed beyond the 2013 forecast bridge opening date.

### TBSRP Programmatic Risks

This category includes risks that are not yet scoped within existing contracts and/or that spread across multiple contracts. The interdependencies between all of the contracts in the program result in the potential for delays on one contract to impact the other contracts.

### Seismic Retrofit of the Dumbarton and Antioch Bridges

When first conceived, the Toll Bridge Seismic Retrofit Program only identified seven of the nine state-owned toll bridges to be in need of seismic retrofit, which excluded the Dumbarton and Antioch Bridges. Further seismic vulnerability studies were completed by Caltrans and BATA on those structures and determined that both structures were in need of retrofit based on current seismic standards. On November 11, 2009, Governor Schwarzenegger approved Assembly Bill 1175 which added the Dumbarton and Antioch Bridges to the Toll Bridge Seismic Retrofit Program. BATA has now initiated efforts to raise tolls on the



Prototype of Bearing for the Antioch Bridge Seismic Retrofit Project



New Pedestrian Bicycle Path on Benicia-Martinez Bridge Under Construction



Site Preparation for New Route 92 and Interstate 880 Separator

seven State-owned toll bridges in the Bay Area to, in part, fund the seismic retrofit of the Dumbarton and Antioch Bridges.

BATA has already funded design plans for both bridge projects in anticipation of the projects being advertised in early 2010. The total estimated cost of these retrofits have been recently revised from \$950 million to \$750 million as project plans have been refined with reduced scope which have minimized cost risks.

## Regional Measure 1 Toll Bridge Program (RM1)

### New Benicia-Martinez Bridge Project

On August 29, 2009, Caltrans, BATA and a number of dignitaries celebrated the substantial completion of the rehabilitation of the 1962 Benicia-Martinez Bridge. As the last major contract of the New Benicia-Martinez Bridge Project, the rehabilitation project converted the existing bridge to carry southbound-only Interstate 680 traffic. The work included adding a new southbound traffic lane (opened in early August 2009), shoulders and a new bicycle/pedestrian pathway. The project is now complete.

### Interstate 880/State Route 92 Interchange Reconstruction Project

On this interchange reconstruction contract, the new east Route 92 to North Interstate 880 direct connector structure (ENCONN) was completed and opened to detour traffic on May 16, 2009. Work is ongoing on a new separator structure. The Department and BATA have revised the support forecast for the project. An increase in support is due to extended advertisement for the project and weather delays. The project is still forecast to be completed as planned in June 2011.



## Toll Bridge Seismic Retrofit Program Cost Summary

	Contract Status	AB 144/SB 66 Budget (Jul 2005)	TBPOC Approved Changes	Current TBPOC Approved Budget (November 2009)	Cost to Date (October 2009)	Current Cost Forecast (November 2009)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
<b>SFOBB East Span Seismic Replacement</b>								
Capital Outlay Construction								
Skyway	Completed	1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-	●
SAS Marine Foundations	Completed	313.5	(32.6)	280.9	275.0	280.9	-	●
SAS Superstructure	Construction	1,753.7	-	1,753.7	836.0	2,014.1	260.4	●
YBI Detour	Construction	132.0	360.8	492.8	399.3	504.0	11.2	●
YBI Transition Structures (YBITS)		299.3	(23.2)	276.1	-	285.9	9.8	●
YBITS 1	Bids Open	-	-	-	-	223.2	-	●
YBITS 2	Design	-	-	-	-	59.4	-	●
YBITS Landscaping	Design	-	-	-	-	3.3	-	●
Oakland Touchdown		283.8	-	283.8	196.9	289.0	5.2	●
OTD 1	Construction	-	-	-	189.1	211.0	-	●
OTD 2	Design	-	-	-	-	64.0	-	●
OTD Electrical Systems	Design	-	-	-	-	4.4	-	●
Submerged Electric Cable	Completed	-	-	-	7.9	9.6	-	●
Existing Bridge Demolition	Design	239.2	-	239.2	-	232.1	(7.1)	●
Stormwater Treatment Measures	Completed	15.0	3.3	18.3	16.7	18.3	-	●
Other Completed Contracts	Completed	90.3	-	90.3	89.2	90.3	-	●
Capital Outlay Support		959.3	-	959.3	781.9	1,203.1	243.8	●
Right-of-Way and Environmental Mitigation		72.4	-	72.4	51.2	72.4	-	●
Other Budgeted Capital		35.1	(3.3)	31.8	0.7	7.7	(24.1)	●
<b>Total SFOBB East Span Replacement</b>		<b>5486.6</b>	<b>266.1</b>	<b>5,752.7</b>	<b>3,883.8</b>	<b>6,251.9</b>	<b>499.2</b>	
<b>SFOBB West Approach Replacement</b>								
Capital Outlay Construction	Completed	309.0	41.7	350.7	328.1	338.1	(12.6)	●
Capital Outlay Support		120.0	-	120.0	116.7	117.0	(3.0)	●
<b>Total SFOBB West Approach Replacement</b>		<b>429.0</b>	<b>41.7</b>	<b>470.7</b>	<b>444.8</b>	<b>455.1</b>	<b>(15.6)</b>	
<b>Completed Program Projects</b>	<b>Completed</b>	<b>1,839.4</b>	<b>(97.5)</b>	<b>1,741.9</b>	<b>1,712.6</b>	<b>1,741.9</b>	<b>-</b>	<b>●</b>
<b>Miscellaneous Program Costs</b>		<b>30.0</b>	<b>-</b>	<b>30.0</b>	<b>24.7</b>	<b>30.0</b>	<b>-</b>	<b>●</b>
<b>Net Programmatic Risks</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>165.4</b>	<b>165.4</b>	<b>●</b>
<b>Program Contingency</b>		<b>900.0</b>	<b>(210.3)</b>	<b>689.7</b>	<b>-</b>	<b>40.7</b>	<b>(649.0)</b>	<b>●</b>
<b>Total Toll Bridge Seismic Retrofit Program</b>		<b>8,685.0</b>	<b>-</b>	<b>8,685.0</b>	<b>6,065.9</b>	<b>8,685.0</b>	<b>-</b>	<b>●</b>



Within approved schedule and budget



Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated



Known project impacts with forthcoming changes to approved schedules and budgets

## Toll Bridge Seismic Retrofit Program Schedule Summary

	AB144/SB 66 Project Completion Schedule Baseline (Jul 2005)	TBPOC Approved Changes (Months)	Current TBPOC Approved Completion Schedule (November 2009)	Current Completion Forecast (November 2009)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i = g + h	j	k = j - i	l	
<b>SFOBB East Span Seismic Replacement</b>							
Contract Completion							
Skyway	Apr 2007	8	Dec 2007	Dec 2007	-	●	See Page 32
SAS Marine Foundations	Jun 2008	(5)	Jan 2008	Jan 2008	-	●	See Page 22
SAS Superstructure	Mar 2012	12	Mar 2013	Mar 2013	-	●	See Page 23
YBI Detour	Jul 2007	41	Dec 2010	Dec 2010	-	●	See Page 16
YBI Transition Structures (YBITS)	Nov 2013	12	Nov 2014	Nov 2014	-		See Page 20
YBITS 1			Sep 2013	Sep 2013	-	●	
YBITS 2			Nov 2014	Nov 2014	-	●	
YBITS Landscaping			TBD	TBD	-	●	
Oakland Touchdown	Nov 2013	12	Nov 2014	Nov 2014	-		See Page 33
OTD 1			May 2010	May 2010	-	●	
OTD 2			Nov 2014	Nov 2014	-	●	
OTD Electrical Systems			TBD	TBD	-	●	
Submerged Electric Cable			Jan 2008	Jan 2008	-	●	
Existing Bridge Demolition	Sep 2014	12	Sep 2015	Sep 2015	-	●	
Stormwater Treatment Measures	Mar 2008	-	Mar 2008	Mar 2008	-	●	
<b>SFOBB East Span Bridge Opening and Other Milestones</b>							
OTD West bound Access			Jan 2010	Jan 2010	-	●	
YBI Detour Open			Sep 2009	Sep 2009	-	●	See Page 18
Westbound Open	Sep 2011	12	Sep 2012	Dec 2012	3	●	
Eastbound Open	Sep 2012	12	Sep 2013	Sep 2013	-	●	
<b>SFOBB West Approach Replacement</b>							
Contract Completion	Aug 2009	(7)	Jan 2009	Jan 2009	-	●	

**Notes:** 1) Figures may not sum up to totals due to rounding effects.  
 2) TBSRP Forecasts for the Monthly Reports are generally updated on a quarterly basis in conjunction with quarterly risk analysis assessments for the TBSRP Projects.

## Regional Measure 1 Program Cost Summary

	Contract Status	BATA Baseline Budget (Jul 2005)	BATA Approved Changes	Current BATA Approved Budget (November 2009)	Cost to Date (November 2009)	Current Cost Forecast (November 2009)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
<b>New Benicia-Martinez Bridge</b>								
Capital Outlay Construction	Construction	861.6	174.0	1,035.6	997.7	1,035.6	-	●
Capital Outlay Support		157.1	35.1	192.2	191.2	192.2	-	●
Capital Outlay Right-of-Way		20.4	(0.1)	20.3	17.0	20.3	-	●
Project Reserve		20.8	3.6	24.4	-	24.4	-	
<b>Total New Benicia-Martinez Bridge</b>		<b>1,059.9</b>	<b>212.6</b>	<b>1,272.5</b>	<b>1,205.9</b>	<b>1,272.5</b>	<b>-</b>	
<b>Interstate 880/Route 92 Interchange Reconstruction</b>								
Capital Outlay Construction	Construction	94.8	60.2	155.0	80.8	155.0	-	●
Capital Outlay Support		28.8	34.6	63.4	50.7	63.4	-	●
Capital Outlay Right-of-Way		9.9	7.0	16.9	11.9	16.9	-	●
Project Reserve		0.3	9.4	9.7	-	9.7	-	
<b>Total I-880/SR-92 Interchange Reconstruction</b>		<b>133.8</b>	<b>111.2</b>	<b>245.0</b>	<b>143.4</b>	<b>245.0</b>	<b>-</b>	
<b>Completed Program Projects</b>		<b>918.9</b>	<b>(30.0)</b>	<b>888.9</b>	<b>878.6</b>	<b>888.9</b>	<b>-</b>	
<b>Total Regional Measure 1 Toll Bridge Program</b>		<b>2,112.6</b>	<b>293.9</b>	<b>2,406.4</b>	<b>2,227.9</b>	<b>2,406.4</b>	<b>-</b>	

- Within approved schedule and budget
- Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated
- Known project impacts with forthcoming changes to approved schedules and budgets

## Regional Measure 1 Program Schedule Summary

	BATA Baseline Completion Schedule (Jul 2005)	BATA Approved Changes (Months)	Current BATA Approved Completion Schedule (November 2009)	Current Completion Forecast (November 2009)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i = g + h	j	k = j - i	l	
<b>New Benicia-Martinez Bridge</b>							
Contract Completion							
1962 BM Bridge Reconstruction	Dec 2009	(4)	Aug 2009	Aug 2009	-	●	See Page 48
<b>New Benicia-Martinez Bridge Opening Date</b>							
New Bridge	Dec 2007	(4)	Aug 2007	Aug 2007	-	●	
<b>Interstate 880/Route 92 Interchange Reconstruction</b>							
Contract Completion							
Interchange Reconstruction	Dec 2010	6	Jun 2011	Jun 2011	-	●	See Page 50

Notes: 1) Figures may not sum to totals due to rounding effects.





Existing Bridge YB4 Span Demolition in Progress

Yerba Buena Island Torch Cutting Existing Viaduct Span YB3





**TOLL BRIDGE SEISMIC RETROFIT PROGRAM**



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge Seismic Retrofit Strategy

When a 250-ton section of the upper deck of the East Span collapsed during the 7.1-magnitude Loma Prieta Earthquake in 1989, it was a wake-up call for the entire Bay Area. While the East Span quickly reopened within a month, critical questions lingered: How could the Bay Bridge—a vital regional lifeline structure—be strengthened to withstand the next major earthquake? Seismic experts from around the world determined that to make each separate element seismically safe on a bridge of this size, the work must be divided into numerous projects. Each project presents unique challenges. Yet there is one common challenge — the need to accommodate the more than 280,000 vehicles that cross the bridge each day.



Overview of the Completed West Approach Replacement Structure

### West Approach Seismic Replacement Project

**Project Status: Completed 2009**

Seismic safety retrofit work on the West Approach in San Francisco—bounded on the west by 5th Street and on the east by the anchorage of the west span at Beale Street—involved completely removing and replacing this one-mile stretch of Interstate 80, as well as six on- and off-ramps within the confines of the West Approach's original footprint. This project was completed on April 8, 2009.

### West Span Seismic Retrofit Project

**Project Status: Completed 2004**

The West Span lies between Yerba Buena Island and San Francisco and is made up of two complete suspension spans connected at a center anchorage. Retrofit work included adding massive amounts of steel and concrete to strengthen the entire West Span, along with new seismic shock absorbers and bracing.



West Span of the Bay Bridge



## East Span Seismic Replacement Project

Rather than a seismic retrofit, the two-mile-long East Span is being completely rebuilt. When completed, the new East Span will consist of several different sections, but will appear as a single streamlined span. The eastbound and westbound lanes of the East Span will no longer include upper and lower decks. The lanes will instead be parallel, providing motorists with expansive views of the bay. These views also will be enjoyed by bicyclists and pedestrians, thanks to a new path on the south side of the bridge that will extend all the way to Yerba Buena Island. The new span will be aligned north of the existing bridge to allow traffic to continue to flow on the existing bridge as crews build the new span.

The new span will feature the world's longest Self-Anchored Suspension (SAS) bridge that will be connected to an elegant roadway supported by piers (Skyway), which will gradually slope down toward the Oakland shoreline (Oakland Touchdown). A new transition structure on Yerba Buena Island (YBI) will connect the SAS to the YBI Tunnel and will transition the east span's side-by-side traffic to the upper and lower decks of the tunnel and west span.

When construction of the new east span is complete and vehicles have been safely rerouted to it, the original east span will be demolished.



Architectural Rendering of the New Self-Anchored Suspension Bridge on the East Span of the Bay Bridge







Yerba Buena Island Transition Structures Looking West

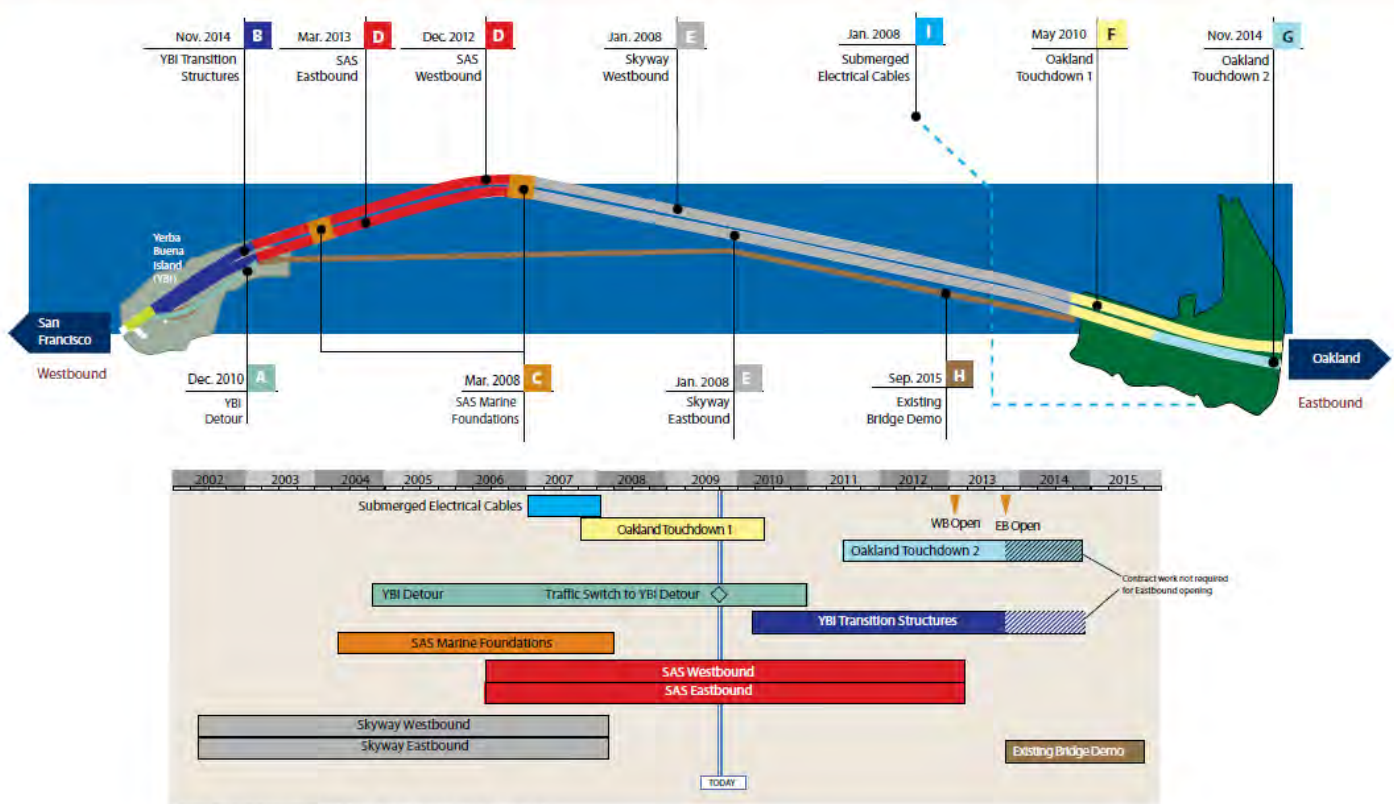
## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Summary

The new East Span bridge can be split into four major components—the Skyway and the Self-Anchored Suspension bridge in the middle and the Yerba Buena Island Transition Structures and Oakland Touchdown approaches at either end. Each component is being constructed by one to three separate contracts that all have been sequenced together.

Highlighted below are the major East Span contracts, including their schedules. The letter designation before each contract corresponds to contract descriptions in the rest of the report.

#### SFOBB East Span Work Sequence





## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Detour (YBID)

As with all of the Bay Bridge's seismic retrofit projects, crews must build the Yerba Buena Island Transition Structures (YBITS) without disrupting traffic. To accomplish this daunting task, YBID eastbound and westbound traffic was shifted off the existing roadway and onto a temporary detour on Labor Day weekend 2009. Drivers will use this detour, just south of the original roadway, until traffic is moved onto the new East Span.

#### **A** YBID Contract

Contractor: C.C. Myers Inc.

Approved Capital Outlay Budget: \$492.8 M

Status: 82% Complete as of November 2009

This contract was originally awarded in early 2004 to construct the detour structure for the planned 2006 opening of the new East Span. Due to the re-advertisement of the SAS superstructure contract in 2005 because of a lack of funding at the time, the bridge opening was rescheduled to 2013. To better integrate the contract into the current East Span schedule and to improve seismic safety and mitigate future construction risks, the TBPOC has approved a number of changes to the contract, including adding the deck replacement work near the tunnel that was rolled into place over Labor Day weekend 2007, advancing future transition structure foundation work and making design enhancements to the temporary detour structure.

These changes have increased the budget and forecast for the contract to cover the revised project scope and potential project risks.



Successful Labor Day Weekend 2007 Roll-In Structure to the Tunnel

#### ***Tunnel Approach Roadway Replacement***

The first in a series of activities to open the detour viaduct was completed in 2007 with the replacement of a 350-foot-long stretch of upper-deck roadway just east of the Yerba Buena Island Tunnel. During this historic milestone, the entire Bay Bridge was closed over the 2007 Labor Day weekend so crews could demolish and replace the old section of the deck with a seismically upgraded 6,500-ton precast section of viaduct that was literally pushed into place (see photo above).

**Status:** Completed.



### Detour Viaduct Fabrication and Construction

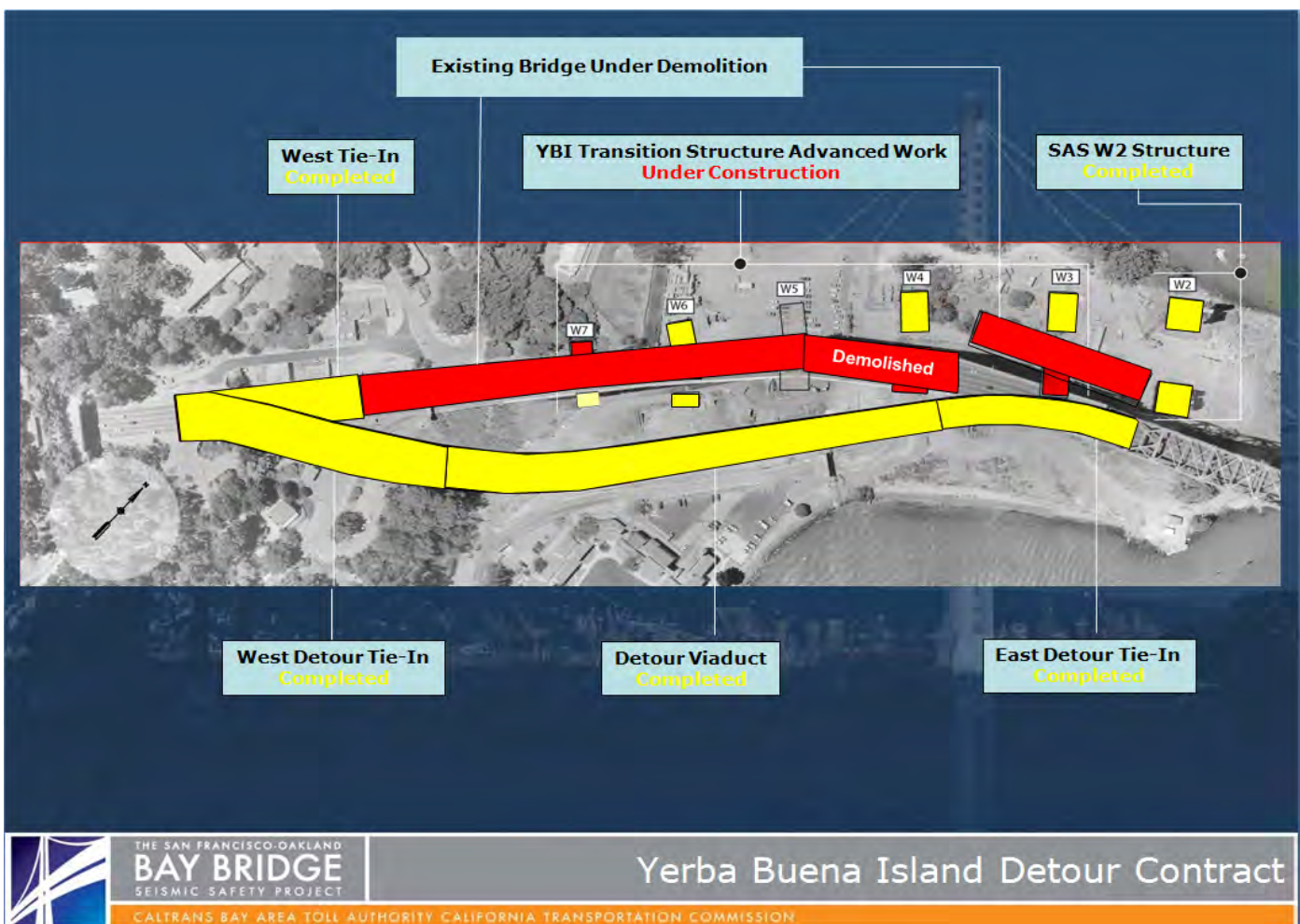
The detour viaduct runs parallel to the existing lanes on the island and ties back into the existing bridge and tunnel. Speed limits have been reduced due to the turns needed to get on and off the detour. The viaduct looks quite similar to the existing bridge, with steel cross beams and girders and a concrete roadway deck. To ensure a good fit, the steel viaduct truss members were pre-fitted during fabrication in South Korea and Oregon.

**Status:** Completed.

### Demolition of Existing Viaduct

After shifting traffic onto the detour structure, crews will focus on the demolition of the existing bridge structure into the tunnel. The old transition structure will need to be removed before construction of the new transition structures from the SAS bridge to the YBI Tunnel can be completed.

**Status:** Started in early September 2009 and is forecast to be completed in May 2010.



Overview of Yerba Buena Island Detour Contract Scope of Work and Current Status





## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Yerba Buena Island Detour (YBID) Existing Bridge Demolition*

Shifting traffic to the Yerba Buena Island Detour was the most significant realignment of the bridge to date. To accomplish this, crews cut away a 288-foot portion of the existing truss bridge and replaced it with a connection to the detour. This dramatic maneuver involved aerial construction that occurred more than 100 feet above the ground. Vehicles will travel on the detour until the completion of the new East Span.

This “S” curve detour now allows for the Yerba Buena Island demolition of the existing structure to proceed. This is a critical step in the overall East Span bridge construction.

**Status:** Demolition of the existing structure is underway.



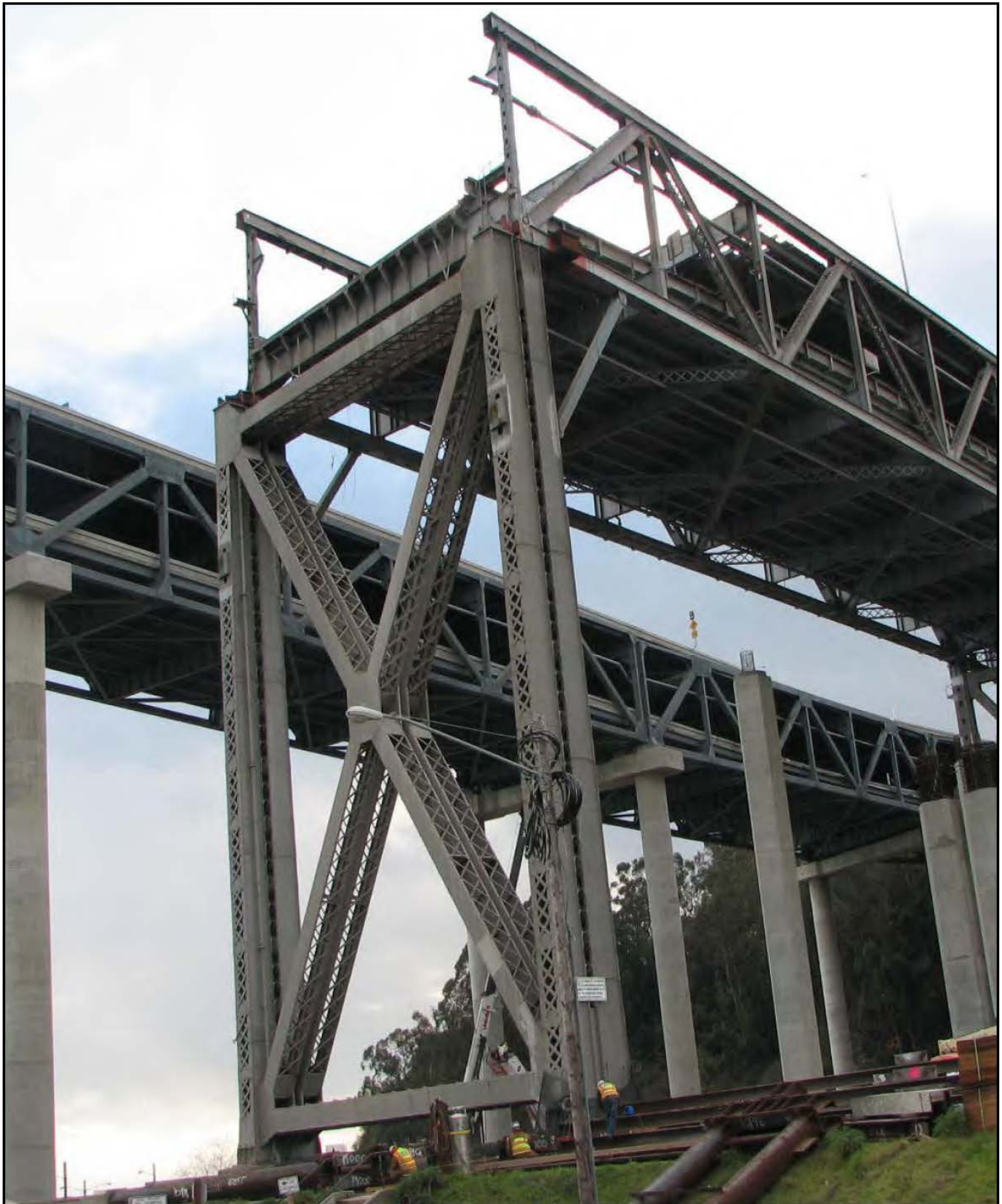
Yerba Buena Island Detour Existing Viaduct Span YB4 Demolition Overview



Completed Yerba Buena Island Detour East Tie-In Roll-Out/Roll-In Structure



## San Francisco-Oakland Bay Bridge East Span Replacement Demolition Progress



Yerba Buena Island Detour Span YB3 Demolished and Removed



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Transition Structures (YBITS)

The new Yerba Buena Island Transition Structures (YBITS) will connect the new SAS bridge span to the existing Yerba Buena Island Tunnel, transitioning the new side-by-side roadway decks to the upper and lower decks of the tunnel. The new structures will be cast-in-place reinforced concrete structures that will look very similar to the already constructed Skyway structures. While some YBITS foundations and columns have been advanced by the YBID contract, the remaining work will be completed under three separate YBITS contracts.

#### **B** YBITS #1 Contract

Contractor: TBD

Current Capital Outlay Forecast: \$223.2 M

Status: Bids Open December 15, 2009



Yerba Buena Island Transition Structures Column W3L and Span

The YBITS #1 contract will construct the mainline roadway structures from the SAS bridge to the YBI tunnel. Work on the structures is scheduled to start once the existing structures have been demolished and removed from the site. The bid was opened on December 15, 2009 with the contractor MCM having the lowest bid contract.



Rendering of Future Yerba Buena Island Transition Structures (top) with Detour Viaduct (bottom)





## YBITS #2 Contract

Contractor: TBD

Current Capital Outlay Forecast: \$59.4 M

Status: **In Design**

The YBITS #2 contract will demolish the detour viaduct after all traffic is shifted to the new bridge and will construct a new eastbound on-ramp to the bridge in its place. The new ramp will also provide the final link for bicycle/pedestrian access off the SAS bridge onto Yerba Buena Island.

## YBITS Landscaping Contract

Contractor: TBD

Current Capital Outlay Forecast: \$3.3 M

Status: **In Design**

Upon completion of the YBITS work, a follow-on landscaping contract will be executed to re-plant and landscape the area.

### ***Yerba Buena Island Transition Structures Advanced Work***

Due to the re-advertisement of the SAS superstructure contract in 2005, it became necessary to temporarily suspend the detour contract and make design changes to the viaduct. To make more effective use of the extended contract duration and to reduce overall project schedule and construction risks, the TBPOC approved the advancement of foundation and column work from the Yerba Buena Island Transition Structures contract.



Overview of YBITS Advanced Column Work in Progress





## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Self-Anchored Suspension (SAS) Bridge

If one single element bestows the status of world class on the new Bay Bridge East Span, it is the Self-Anchored Suspension (SAS) bridge. This engineering marvel will be the world's largest SAS span at 2,047 feet in length, as well as the first bridge of its kind built with a single tower.

The SAS was separated into three separate contracts—construction of the land-based foundations and columns at Pier W2; construction of the marine-based foundations and columns at Piers T1 and E2; and construction of the SAS steel superstructure, including the tower, roadway, and cabling. Construction of the foundations at Pier W2 and at Piers T1 and E2 was completed in 2004 and 2007, respectively.

#### SAS Land Foundation Contract

Contractor: West Bay Builders, Inc.

Approved Capital Outlay Budget: \$26.4 M

Status: Completed October 2004

The twin W2 columns on Yerba Buena Island provide essential support for the western end of the SAS bridge, where the single main cable for the suspension span will extend down from the tower and wrap around and under the western end of the roadway deck. Each of these huge columns required massive amounts of concrete and steel and are anchored 80 feet into the island's solid bedrock.



SAS West Elevation of W2



SAS T1 Trestle Construction Overview

#### C SAS Marine Foundations Contract

Contractor: Kiewit/FCI/Manson, Joint Venture

Approved Capital Outlay Budget: \$280.9 M

Status: Completed January 2008

Construction of the piers at E2 and T1 required significant on-water resources to drive the foundation support piles down, not only to bedrock, but also through the bay water and mud (see rendering on facing page).

The T1 foundation piles extend 196 feet below the waterline and are anchored into bedrock with heavily reinforced concrete rock sockets that are drilled into the rock. Driven nearly 340 feet deep, the steel and concrete E2 foundation piles were driven 100 feet deeper than the deepest timber piles of the existing east span in order to get through the bay mud and reach solid bedrock.



## D SAS Superstructure Contract

Contractor: American Bridge/Fluor Enterprises, Joint Venture

Approved Capital Outlay Budget: \$1,753.7 M

Status: 46% Complete as of November 2009

Rising 525 feet above mean sea level and embedded in rock, the single-tower SAS span is designed to withstand a massive earthquake. The SAS bridge is not just another suspension bridge. Traditional main cable suspension bridges have twin cables with smaller suspender cables connected to them. These cables hold up the roadbed and are anchored to the east end of the box girders. While there will appear to be two main cables on the SAS, there will actually only be one. This single cable will be anchored within the eastern end of the roadway, carried over the tower and then wrapped around the two side-by-side decks at the western end.

The single steel tower will be made up of four separate legs and the tower head connected by shear link beams, which function much like a fuse in an electrical circuit. These beams will absorb most of the impact from an earthquake, preventing damage to the tower legs.

The next several pages highlight the construction sequence of the SAS and are followed by detailed updates on specific construction activities.



Architectural Rendering of New Self-Anchored Suspension Span





## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Construction Sequence*

#### STEP 1 - CONSTRUCT TEMPORARY SUPPORT STRUCTURES

Temporary support structures will need to be erected from the Skyway to Yerba Buena Island to support the new SAS bridge during construction.

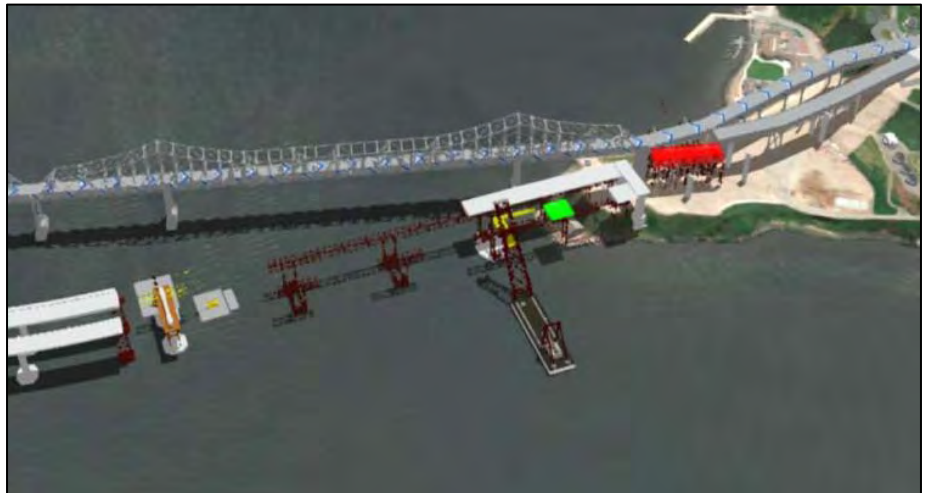
**Status:** Foundations for the temporary supports are complete. Support structures are now being installed from west to east.



#### STEP 2 - INSTALL ROADWAYS

The roadway boxes will be lifted into place by using the shear-leg crane barge. The boxes will be bolted and welded together atop the temporary support trusses to form two continuous parallel steel roadway boxes.

**Status:** The Roadway Box segments are being fabricated (see page 26 for more information). OBG lifts 1 through 4 Eastbound and Westbound shipments are forecast for the end of December 2009.



#### STEP 3 - INSTALL TOWER

Each of the four legs of the tower will be erected in five separate lifts. The first lift will use the shear-leg crane barge while the remaining higher lifts will use a temporary support tower and lifting jacks.

**Status:** The first shipment of tower sections is being fabricated and is forecast for shipment in mid - 2010. (see page 26 for more information).



#### STEP 4 - MAIN CABLE AND SUSPENDER INSTALLATION

The main cable will be pulled from the east end of the SAS bridge, over the tower, and wrapped around the west end before returning back. Suspender cables will be added to lift the roadway decks off the temporary support structure.

**Status:** Cable installation is pending the erection of the tower and roadway spans.  
**Shipment for the first half of the cables is forecast for January 2010.**



#### STEP 5 - WESTBOUND OPENING

The new bridge will first open in the westbound direction pending completion of the Yerba Buena Island Transition Structures. Westbound access to the Skyway from Oakland will be completed by the Oakland Touchdown #1 contract in 2009.

**Status:** Westbound opening is scheduled for 2012.



#### STEP 6 - EASTBOUND OPENING

Opening of the bridge in the eastbound direction is pending completion of Oakland Touchdown #2, which needs westbound traffic off the existing bridge before the eastbound approach structure can be completed.

**Status:** Eastbound opening is scheduled for 2013.





## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Superstructure Fabrication Activities*

Nearly every component of the SAS above the waterline—from the temporary support structures to the roadway and tower box sections to the main cable and suspender ropes—will be fabricated off-site and erected into place upon arrival in the Bay Area. This project is truly global in nature, with fabrication of the bridge components occurring not only in the United States but around the world—in China, the United Kingdom, Japan, South Korea and other locations.

#### **Roadway and Tower Segments**

Like giant three-dimensional jigsaw puzzles, the roadway and tower segments of the SAS bridge are hollow steel shells that are internally strengthened and stiffened by a highly engineered network of welded steel ribs and diaphragms. The use of steel in this manner allows for a flexible yet relatively light and strong structure able to withstand the massive loads placed on the bridge during seismic events.

**Status:** The contractor has reported that fabrication of the steel tower and roadway boxes has fallen 15 months behind schedule due to the complexity of the design and fabrication.

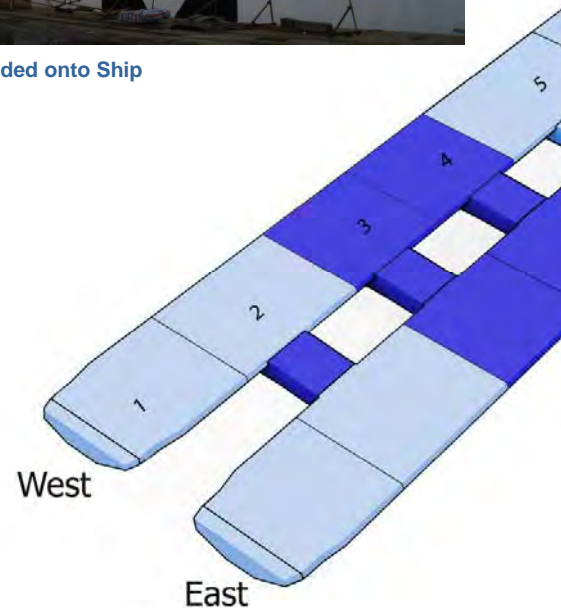
As shown in the diagram to the right, roadway segments 1 to 11 are in segment assembly or further along in the process, while segment 12 is in subassembly fabrication. Tower segments 1 to 4 are in various stages of fabrication. The first shipment of roadway boxes (segments 1 through 4) are anticipated by the end of the year, while the first tower segments are expected next year.

All components have undergone a rigorous quality review by ZPMC, ABF, and Caltrans to ensure that only bridge components that have been built in accordance to the specifications will be shipped.

On the critical path to completing the bridge are the fabrication of the last two roadway sections (segments 13 and 14). Start of fabrication of these segments has fallen behind schedule due to delays in the fabrication drawing preparation process. The TBPOC continues to execute and explore options to improve review times and



SAS Lift 3W Being Loaded onto Ship



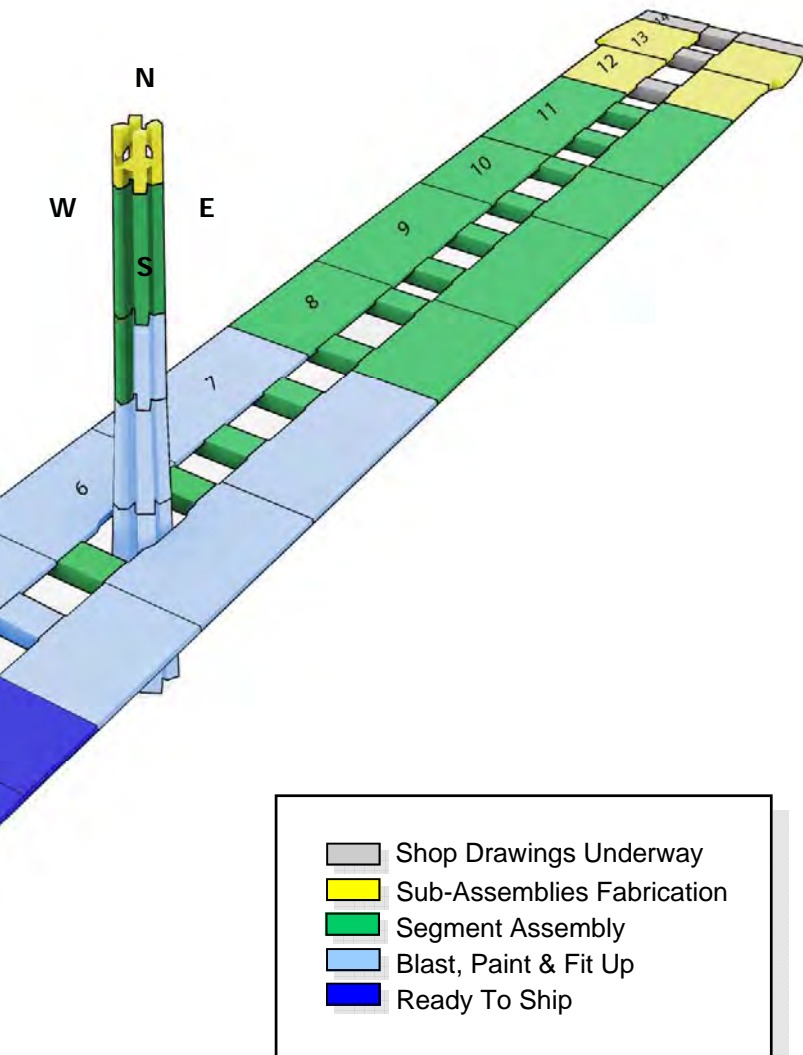
communication, including locating additional design staff with shop drawing drafters in Vancouver, Canada.

These delays will likely prevent the westbound opening of the bridge in 2012, but we continue to estimate for full opening of the bridge in 2013 (see additional progress photos on pages 68 through 69).



## Fabrication Progress Diagram

Through November 30, 2009



SAS Tower Shaft Lift 1 West Placed onto Base Place on Heavy Dock alongside Lift 1 South and East



SAS Tower Shaft Rotating Lift 4 West in Shop 11



SAS Tower Shaft Lifts 1 West Moved to Heavy Dock for Vertical Tipping



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### ***Self-Anchored Suspension (SAS) Superstructure Fabrication Activities (cont.)***

#### ***Cables and Suspenders***

One continuous main cable will be used to support the roadway deck of the SAS bridge. Anchored into the eastern end of the bridge, the main cable will start on the east end of the box girder, go over the main tower at T1, loop around the western end of the roadway decks at Pier W2, and then go back over the main tower to the eastern end of the box girder. The main cable will be made up of bundles of individual wire strands. Supporting the roadway decks to the main cable will be a number of smaller suspender cables. The main cable will be fabricated in China and the suspender cables in Missouri, USA.

**Status:** Initial trial testing of the main cable strands was performed in September 2009. **The first half of the cable shipment is anticipated in January of 2010.**



SAS Cable Band Machining



SAS Service Platform Upper-Frame Galvanizing, California

#### ***Saddles, Bearings, Hinges, and Other Bridge Components***

The mounts on which the main cable and suspender ropes will sit are made from solid steel castings. Castings for the main cable saddles are being made by Japan Steel Works, while the cable bands and brackets are being made by Goodwin Steel in the United Kingdom.

The bridge bearings and hinges that support, connect, and transfer loads from the self-anchored suspension (SAS) span to the adjoining sections of the new east span are being fabricated in a number of locations. Work on the bearings is being performed in Pennsylvania, USA and South Korea, while hinge pipe beams are being fabricated in Oregon, USA.

**Status:** **The cable saddles and hinges at the W2 cap beam and YBITS are under fabrication. The hinges in between the Skyway and Oakland Touchdown have been installed.**

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Superstructure Field Activities*



Shear-Leg Barge Crane Lifting a Section of SAS Temporary Support Structure

#### **Shear-Leg Barge Crane**

The massive shear-leg barge crane that is helping to build the SAS superstructure arrived in the San Francisco Bay on March 12, 2009 after a trans-Pacific voyage.

The crane and barge are separate units operating as a single entity dubbed the “Left Coast Lifter.” The 400-by-100-foot barge is a U.S. flagged vessel that was custom built in Portland, Oregon by U.S. Barge, LLC and outfitted with the crane by Shanghai Zhenhua Heavy Industry Co. Ltd. (ZPMC) at a facility near Shanghai, China. The crane’s boom weighs 992 tons and is 328 feet long. The crane can lift up to 1,873 tons, including the deck and tower sections for the SAS.

The crane has off-loaded all temporary structures shipped to date and has lifted 85 percent of the temporary structures into place. Work on the eastbound side of the SAS must occur first, as the crane cannot reach over permanent westbound decks to work on the eastbound roadway.

**Status:** The shear-leg crane arrived at the jobsite March 2009



SAS View from East of E2

#### **Cap Beams**

Construction of the massive steel-reinforced concrete cap beams that link the columns at piers W2 and E2 was left to the SAS superstructure contractor and represents the only concrete portions of work on that contract. The east and west ends of the SAS roadway will rest on the cap beams and the main cable will wrap around Pier W2, while anchoring into the east end of the SAS deck sections near E2.

**Status:** Completed March 2009





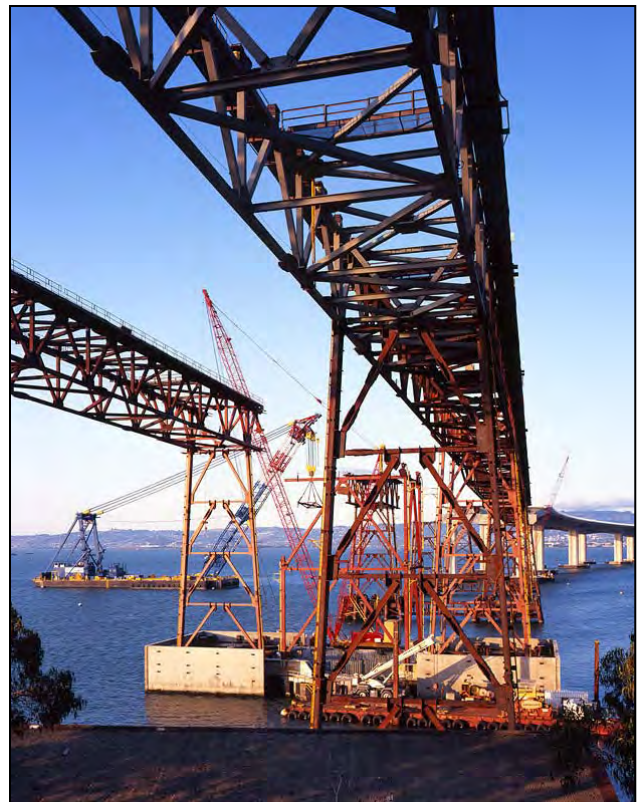
## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### ***Self-Anchored Suspension (SAS) Superstructure Field Activities***

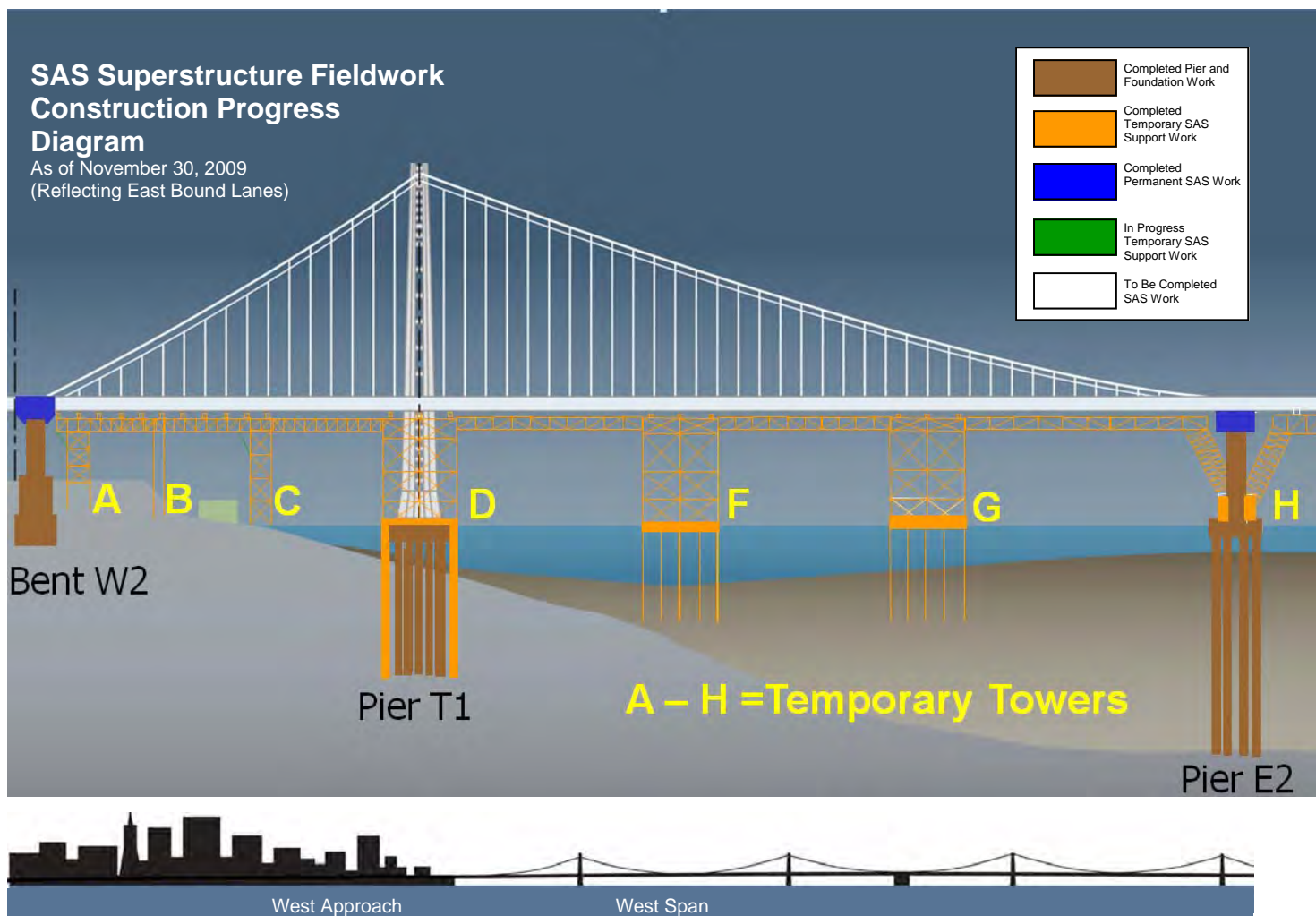
#### ***Temporary Support Structures***

To erect the roadway decks and tower of the bridge, temporary support structures will first be put in place. Almost a bridge in itself, the temporary support structures will stretch from the end of the completed Skyway back to Yerba Buena Island. For the tower, a strand jack system is being built into the tower's temporary frame to elevate the upper sections of the tower into place. These temporary supports are being fabricated in the Bay Area, as well as in Oregon and in China at ZPMC.

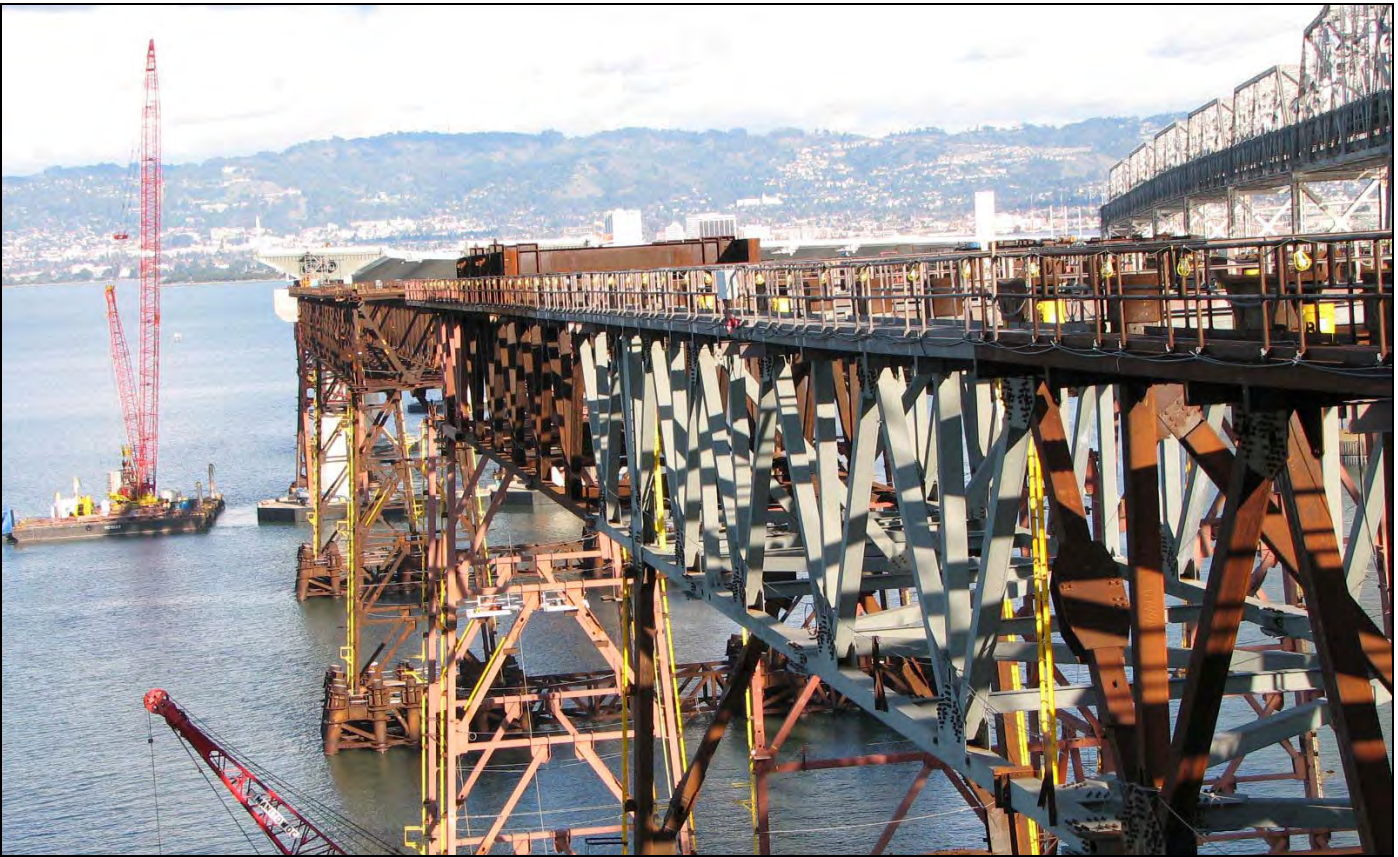
**Status:** The temporary support foundations and six temporary towers have been completed and 85 percent of the temporary structures are in place.



SAS Eastbound and Westbound Temporary Support Structures







SAS Westbound Temporary Support Structure



SAS Temporary Support Structures and Tower Erection Temporary Framing and the End of the completed Skyway on the Left





## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Skyway

The Skyway, which comprises much of the new East Span, will drastically change the appearance of the Bay Bridge. Replacing the gray steel that currently cages drivers, a graceful, elevated roadway supported by piers will provide sweeping views of the bay.

#### **E Skyway Contract**

**Contractor:** Kiewit/FCI/Manson, Joint Venture

**Approved Capital Outlay Budget:** \$1,254.1 M

**Status:** Completed March 2008

Extending for more than a mile across Oakland mudflats, the Skyway is the longest section of the East Span. It sits between the new Self-Anchored Suspension (SAS) span and the Oakland Touchdown. In addition to incorporating the latest seismic-safety technology, the side-by-side roadway decks of the Skyway feature shoulders and lane widths built to modern standards.

The Skyway's decks are composed of 452 pre-cast concrete segments (standing three stories high), and contain approximately 200 million pounds of structural steel, 120 million pounds of reinforcing steel, 200 thousand linear feet of piling and about 450 thousand cubic yards of concrete. These are the largest segments of their kind ever cast and were lifted into place by winches that were custom-made for this project.

The Skyway marine foundation consists of 160 hollow steel pipe piles measuring eight feet in diameter and dispersed among 14 sets of piers. The 365-ton piles were driven more than 300 feet into the deep bay mud. The new East Span piles were battered or driven in at an angle, rather than vertically, to obtain maximum strength and resistance.

Designed specifically to move during a major earthquake, the Skyway features several state-of-the-art seismic safety innovations, including 60-foot-long hinge pipe beams. These beams will allow deck segments on the Skyway to move, enabling the deck to withstand greater motion and to absorb more earthquake energy.



Completed Skyway Left of Existing East Span



Western End of Completed Skyway



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Oakland Touchdown

When completed, the Oakland Touchdown (OTD) structures will connect Interstate 80 in Oakland to the new side-by-side decks of the new East Span. For westbound drivers, the OTD will be their introduction to the graceful new East Span. For eastbound drivers from San Francisco, this section of the bridge will carry them from the Skyway to the East Bay, offering unobstructed views of the Oakland hills.

The OTD will be constructed through two contracts. The first contract will build the new westbound lanes, as well as part of the eastbound lanes. The second contract to complete the eastbound lanes cannot fully begin until westbound traffic is shifted onto the new bridge so that a portion of the upper deck of the existing bridge can be demolished to allow for a smooth transition for the new eastbound lanes in Oakland.

#### **F** Oakland Touchdown #1 Contract

Contractor: MCM Construction, Inc.

Current Capital Outlay Forecast: \$211.0 M

Status: 85% Complete as of November 2009

The OTD #1 contract constructs the entire 1,000-foot-long westbound approach from the toll plaza to the Skyway. When completed, the westbound approach structure will provide direct access to the westbound Skyway. In the eastbound direction, the contract will construct a portion of the eastbound structure and all of the eastbound foundations that are not in conflict with the existing bridge.

**Status:** On the westbound structure, the contractor has completed all work and is now proceeding with eastbound superstructure work. The contractor, MCM, re-established temporary construction access to the Skyway structure over the new westbound Oakland Touchdown on August 4.

#### **G** Oakland Touchdown #2 Contract

Contractor: TBD

Current Capital Outlay Forecast: \$64.0 M

Status: In design

The OTD #2 contract will complete the eastbound approach structure from the end of the Skyway to Oakland. This work is critical to the eastbound opening of the new bridge, but cannot be completed until westbound traffic has been shifted off the existing upper deck to the new SAS bridge.



Oakland Touchdown Progress





## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Other Contracts

A number of contracts needed to relocate utilities, clear areas of archeological artifacts, and prepare areas for future work have already been completed. The last major contract will be the eventual demolition and removal of the existing bridge, which by that time will have served the Bay Area for nearly 80 years. Following is a status of some the other East Span contracts.



Archeological Investigations

### East Span Interim Seismic Retrofit

Contractors: 1) California Engineering Contractors  
2) Balfour Beatty

Approved Capital Outlay Budget: \$30.8 M

Status: Completed October 2000

After the 1989 Loma Prieta Earthquake, and before the final retrofit strategy was determined for the East Span, Caltrans completed an interim retrofit of the existing bridge to prevent a catastrophic collapse of the bridge should a similar earthquake occur before the East Span was completely replaced. The interim retrofit was performed under two separate contracts that lengthened pier seats, added some structural members, and strengthened areas of the bridge so they would be more resilient during an earthquake.



Existing East Span of Bay Bridge

### Stormwater Treatment Measures

Contractor: Diablo Construction, Inc.

Approved Capital Outlay Budget: \$18.3 M

Status: Completed December 2008

The Stormwater Treatment Measures contract implemented a number of best practices for the management and treatment of stormwater runoff. Focused on the areas around and approaching the toll plaza, the contract added new drainage and built new bio-retention swales and other related constructs.



Stormwater Retention Basin



## Yerba Buena Island Substation

Contractor: West Bay Builders

Approved Capital Outlay Budget: \$11.6 M

Status: Completed May 2005

This contract relocated an electrical substation just east of the Yerba Buena Island Tunnel in preparation for the new East Span.

## Pile Installation Demonstration

Contractor: Manson and Dutra, Joint Venture

Approved Capital Outlay Budget: \$9.2 M

Status: Completed December 2000

While common in offshore drilling, the new East Span is one of the first bridges to use large-diameter battered piles in its foundations. To minimize project risks and build industry knowledge, a pile installation demonstration project was initiated to prove the efficacy of the proposed technology and methodology. The demonstration was highly successful and helped result in zero contract change orders or claims for pile driving on the project.

## H Existing Bridge Demolition

Contractor: TBD

Approved Capital Outlay Budget: \$239.2 M

Status: In Design

Design work on the contract will start in earnest as the opening of the new bridge to traffic approaches.



New YBI Electrical Substation

## I Electrical Cable Relocation

Contractor: Manson Construction

Approved Capital Outlay Budget: \$9.6 M

Status: Completed January 2008

A submerged cable from Oakland that is close to where the new bridge will touch down supplies electrical power to Treasure Island. To avoid any possible damage to the cable during construction, two new cables were run from Oakland to Treasure Island to replace the existing cable. The extra cable was funded by the Treasure Island Development Authority and its future development plans.



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Other Completed Projects

The State Legislature in the 1990s identified seven of the nine state-owned toll bridges for seismic retrofit. In addition to the San Francisco-Oakland Bay Bridge, these included the Benicia-Martinez, Carquinez, Richmond-San Rafael and San Mateo-Hayward bridges in the Bay Area, and the Vincent Thomas and Coronado bridges in Southern California. Other than the East Span of the Bay Bridge, the retrofits of all of the bridges have been completed as planned.

### San Mateo-Hayward Bridge Seismic Retrofit Project

**Project Status: Completed 2000**

The San Mateo-Hayward Bridge seismic retrofit project focused on the strengthening of the high-rise portion of the span. The foundations of the bridge were significantly upgraded with additional piles.

### 1958 Carquinez Bridge Seismic Retrofit Project

**Project Status: Completed 2002**

The eastbound 1958 Carquinez Bridge was retrofitted in 2002 with additional reinforcement of the cantilever thru-truss structure.

### 1962 Benicia-Martinez Bridge Seismic Retrofit Project

**Project Status: Completed 2003**

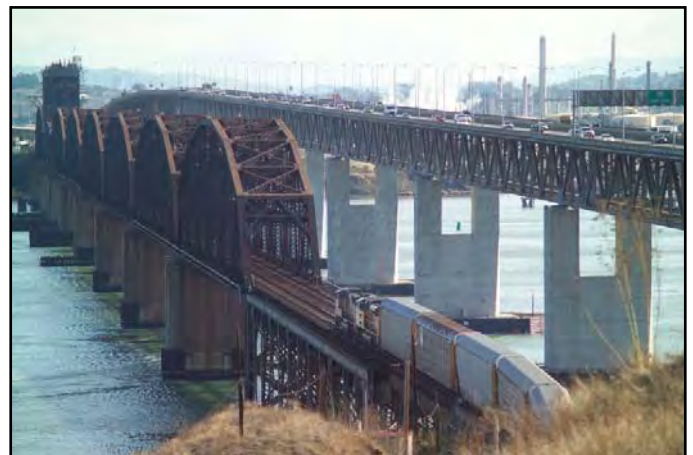
The southbound 1962 Benicia-Martinez Bridge was retrofitted to “Lifeline” status with the strengthening of the foundations and columns and the addition of seismic bearings that allow the bridge to move during a major seismic event. The Lifeline status means the bridge is designed to sustain minor to moderate damage after an event and to reopen quickly to emergency response traffic.



High-Rise Section of San Mateo-Hayward Bridge



1958 Carquinez Bridge (foreground) with the 1927 Span (middle) under Demolition and the New Alfred Zampa Memorial Bridge (background)



1962 Benicia-Martinez Bridge (right)



## Richmond-San Rafael Bridge Seismic Retrofit Project

**Project Status: Completed 2005**

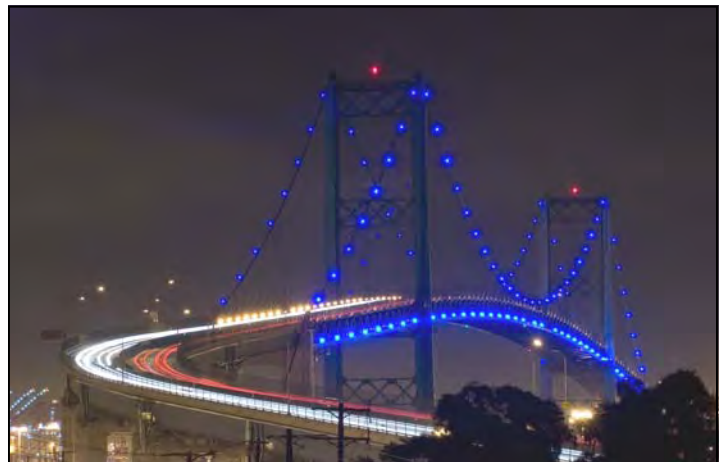
The Richmond-San Rafael Bridge was retrofitted to a “No Collapse” classification to avoid catastrophic failure during a major seismic event. The foundations, columns, and truss of the bridge were strengthened, and the entire low-rise approach viaduct from Marin County was replaced.



Richmond-San Rafael Bridge

## Los Angeles-Vincent Thomas Bridge Seismic Retrofit Project

**Project Status: Completed 2000**



Los Angeles-Vincent Thomas Bridge

## San Diego-Coronado Bridge Seismic Retrofit Project

**Project Status: Completed 2002**



San Diego-Coronado Bridge





Antioch Bridge

## Seismic Retrofit of the Dumbarton and Antioch Bridges



## SEISMIC RETROFIT OF DUMBARTON AND ANTIOCH BRIDGES

### Dumbarton Bridge Seismic Retrofit Project

#### Project Status: In Design

The Dumbarton Bridge was opened to traffic in 1982, linking the cities of Newark in Alameda County and East Palo Alto in San Mateo County. The 1.6-mile-long bridge carries average daily traffic of nearly 60,000 vehicles over its six lanes and has an eight-foot bicycle/pedestrian lane to the south.

Though located between the San Andreas and Hayward faults, the Dumbarton Bridge was not included in the Toll Bridge Seismic Retrofit Program based on evaluations made in the 1990s that concluded the bridge did not warrant retrofitting. The bridge has since been re-evaluated for seismic vulnerability based on more recent seismic engineering, which has shown the bridge to be susceptible to damage from a major earthquake.



Mock-Up of Dumbarton Pier Columns Undergoing Seismic Testing



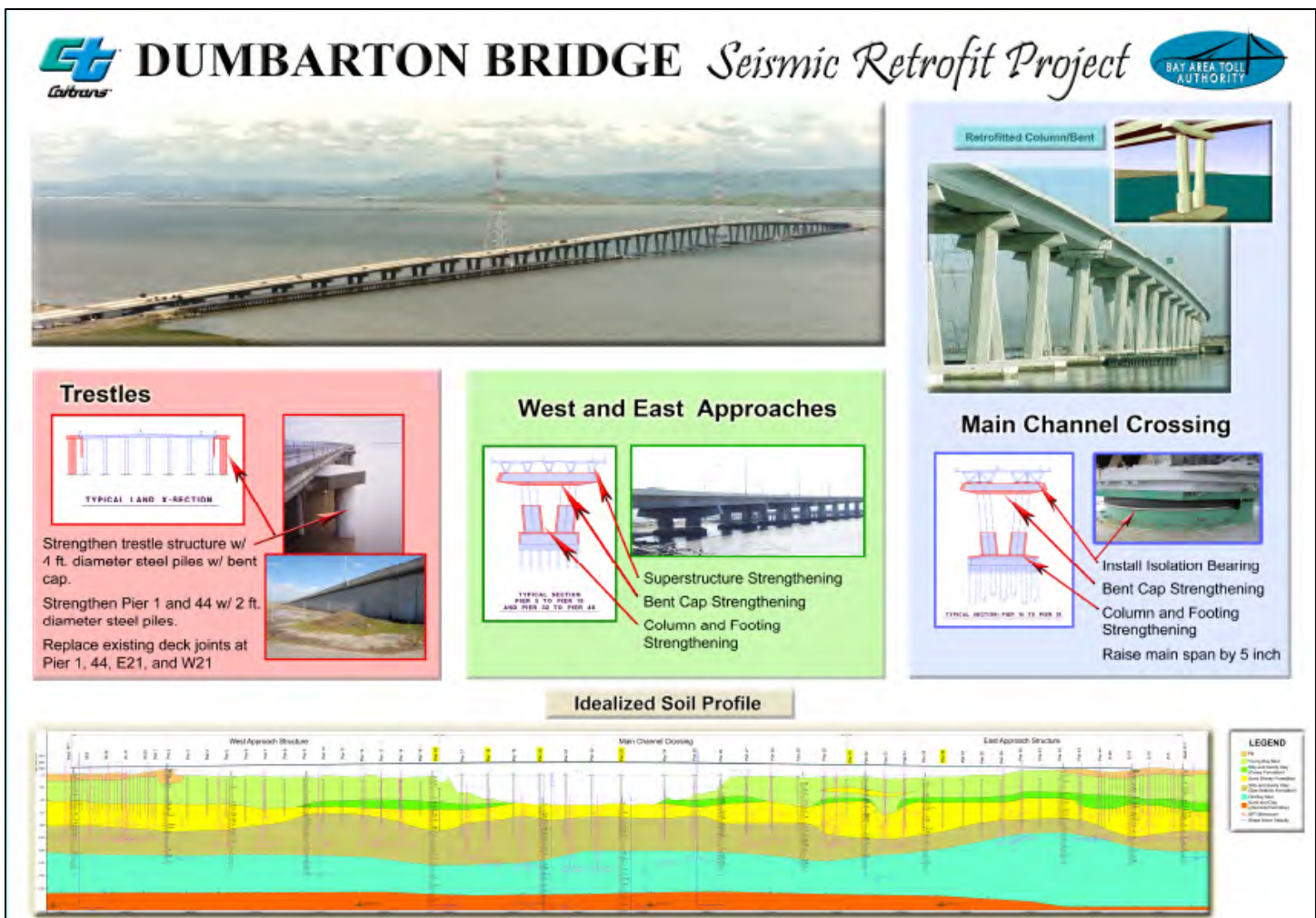
Existing Dumbarton Bridge Looking East toward the Alameda County Foothills

Based on the vulnerability studies and a follow-up sensitivity analysis of seismic risk, Caltrans and BATA decided to take steps towards retrofitting the Dumbarton Bridge, even though full funding for the project has not yet been identified. Using BATA toll bridge rehabilitation funding, a comprehensive seismic analysis of the bridge has commenced. This includes detailed geotechnical and geophysical investigations at the bridge and the development of a seismic retrofit strategy and design plans.

The current retrofit strategy for the Dumbarton Bridge includes superstructure and deck modifications, plus strengthening of the over land approach slab structures. Additional activities are identified in the attached diagram. The results of the seismic analysis and proposed retrofit strategy have been presented to the Toll Bridge Seismic Safety Peer Review Panel.

**Status:** On October 11, 2009, Governor Schwarzenegger approved Assembly Bill 1175 that added the Dumbarton and Antioch Bridges to the Toll Bridge Seismic Retrofit Program. BATA has now initiated efforts to raise tolls on the seven state-owned toll bridges in the Bay Area to, in part, fund the seismic retrofit of the Dumbarton and Antioch bridges.

BATA has already funded design plans for both bridge projects in anticipation of the projects being advertised in early 2010. The total estimated cost of these retrofits has been recently revised from \$950 million to \$750 million as project plans have been refined with reduced scope, which has minimized cost risks. In the future, the project progress report will be updated to better reflect the incorporation of these two projects into the Toll Bridge Seismic Retrofit Program.





## SEISMIC RETROFIT OF DUMBARTON AND ANTIOCH BRIDGES

### Antioch Bridge Seismic Retrofit Project

#### Project Status: In Design

Serving the Delta region of the Bay Area, the Antioch Bridge takes State Route 160 traffic over the San Joaquin River, linking eastern Contra Costa County with Sacramento County. The current bridge was opened in 1978 with one lane in each direction and carries an average of more than 10,000 vehicles a day. Approximately 1.8 miles long, the bridge is a steel girder support roadway on reinforced concrete columns and foundations.

Like the Dumbarton Bridge, the Antioch bridge was not included in the Toll Bridge Seismic Retrofit Program based on evaluations made in the 1990s that concluded that the bridge did not warrant retrofitting. The Antioch Bridge has since been re-evaluated for seismic vulnerability based on more recent seismic engineering, which has shown the bridge to be susceptible to damage from a major earthquake.

Based on the vulnerability studies and a follow-up sensitivity analysis of seismic risk, Caltrans and BATA decided to take steps toward retrofitting the Antioch Bridge, even though full funding for the project has not yet been identified. Using BATA toll bridge rehabilitation funding, a comprehensive seismic analysis of the bridge has commenced. This analysis includes detailed geotechnical and geophysical investigation at the bridge and the development of a seismic retrofit strategy and design plans.

The current retrofit strategy for the Antioch Bridge includes relatively minor modifications to the approach structure on Sherman Island, the addition of isolation bearings, strengthening of the columns, and hinge retrofits. The results of the seismic analysis and proposed retrofit strategy have been presented to the Toll Bridge Seismic Safety Peer Review Panel.



Antioch Bridge

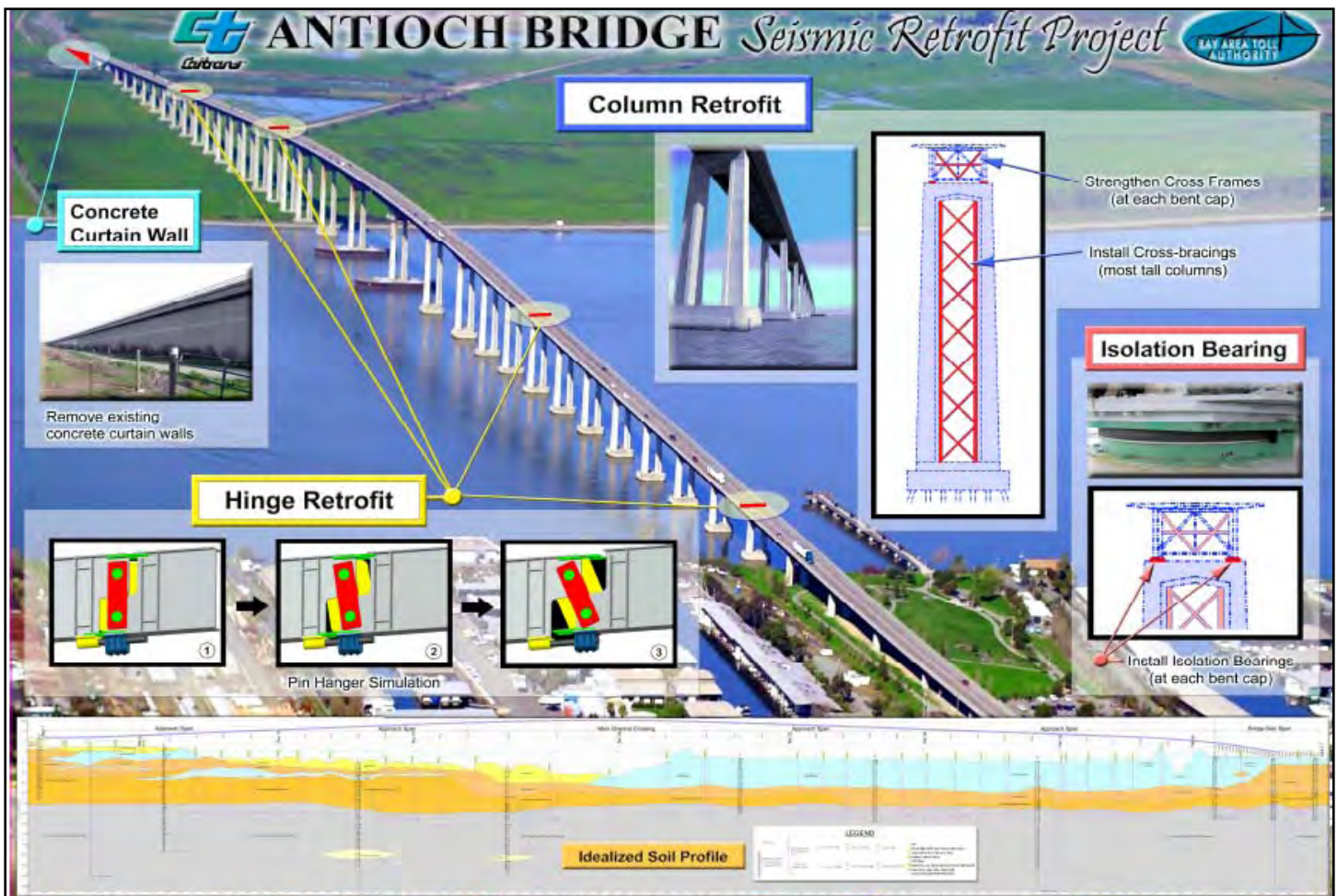


**Status:** On October 11, 2009, Governor Schwarzenegger approved Assembly Bill 1175 that added the Dumbarton and Antioch Bridges to the Toll Bridge Seismic Retrofit Program. BATA has now initiated efforts to raise tolls on the seven state-owned toll bridges in the Bay Area to, in part, fund the seismic retrofit of the Dumbarton and Antioch bridges.

BATA has already funded design plans for both bridge projects in anticipation of the projects being advertised in early 2010. The total estimated cost of these retrofits has been recently revised from \$950 million to \$750 million as project plans have been refined with reduced scope, which has minimized cost risks. In the future, the project progress report will be updated to better reflect the incorporation of these two projects into the Toll Bridge Seismic Retrofit Program.



Prototype of Bearing for the Antioch Bridge Seismic Retrofit Project



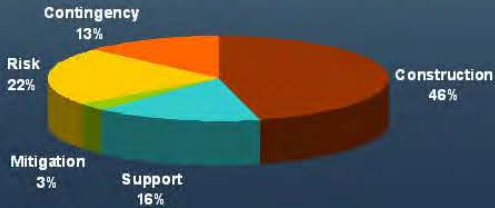
Seismic Retrofit Strategy Summary for Antioch Bridge

## Seismic Retrofits of Dumbarton and Antioch Bridges

### Project Cost and Schedule Summaries

# Total Project Costs – \$750 Million

Description	Antioch (\$ Millions)	Dumbarton (\$ Millions)
CONSTRUCTION COST ESTIMATE (ESCALATION TO MID YEAR OF CONSTRUCTION)	\$98	\$195
CONTINGENCIES	45	65
SUBTOTAL CAPITAL COST ESTIMATE	143	260
SUPPORT COST ESTIMATE	39	95
MITIGATION COST ESTIMATE	13	10
RISK COST ESTIMATE	72	118
<b>TOTAL COST ESTIMATE</b>	<b>\$267</b>	<b>\$483</b>

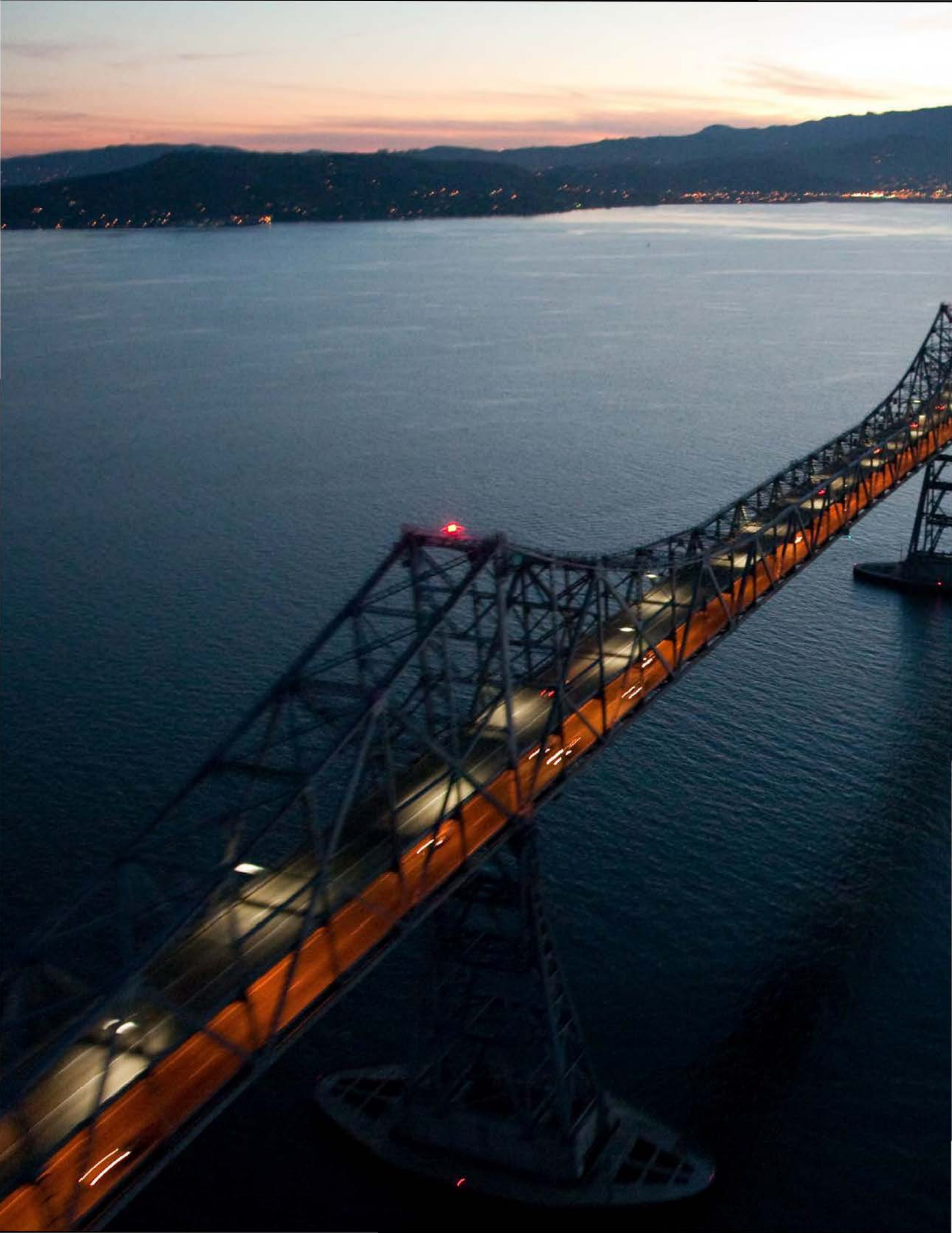


Milestone	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
<b>PSR Phase</b>												
Begin Retrofit Strategy Study	(Apr 08) opt											
<b>Geotechnical Investigations</b>												
Geotechnical Investigations	(Jan08)											
<b>Modeling and Analysis - As-Built</b>												
Draft As-Built Analysis Report Ind. Testing	(Jan07-Jan08)											
Final As-Built Analysis Report	(Dec07-Feb08)											
<b>Environmental</b>												
Project Reports	(Feb08-Sep08)											
Permits - Environmental	(Feb08-Aug09)											
<b>Agencies Permits</b>												
Right of Way									(Jan08-Mar10)			
<b>Office Engineering</b>												
Strategy Meeting	(August 22, 2008)											
Submit Plan/Footprint for Permit	(September 1, 2008)											
Retrofit Strategy Estimate	(Aug08-Oct08)											
Final Strategy Report	(Nov08-Dec08)											
65% Unchecked Detail	(March 11, 2009)											
P & Q	(May09)											
Draft Structural PS&E	(Jun09)											
Structural PS&E	(Jul09)											
District PS&E	(Aug09)											
Ready to List	(Sep09-Mar10)											
Advertise	(Mar10-Jun10)											
Award	(Aug10)											
Testing	(Apr08-Jun09)											

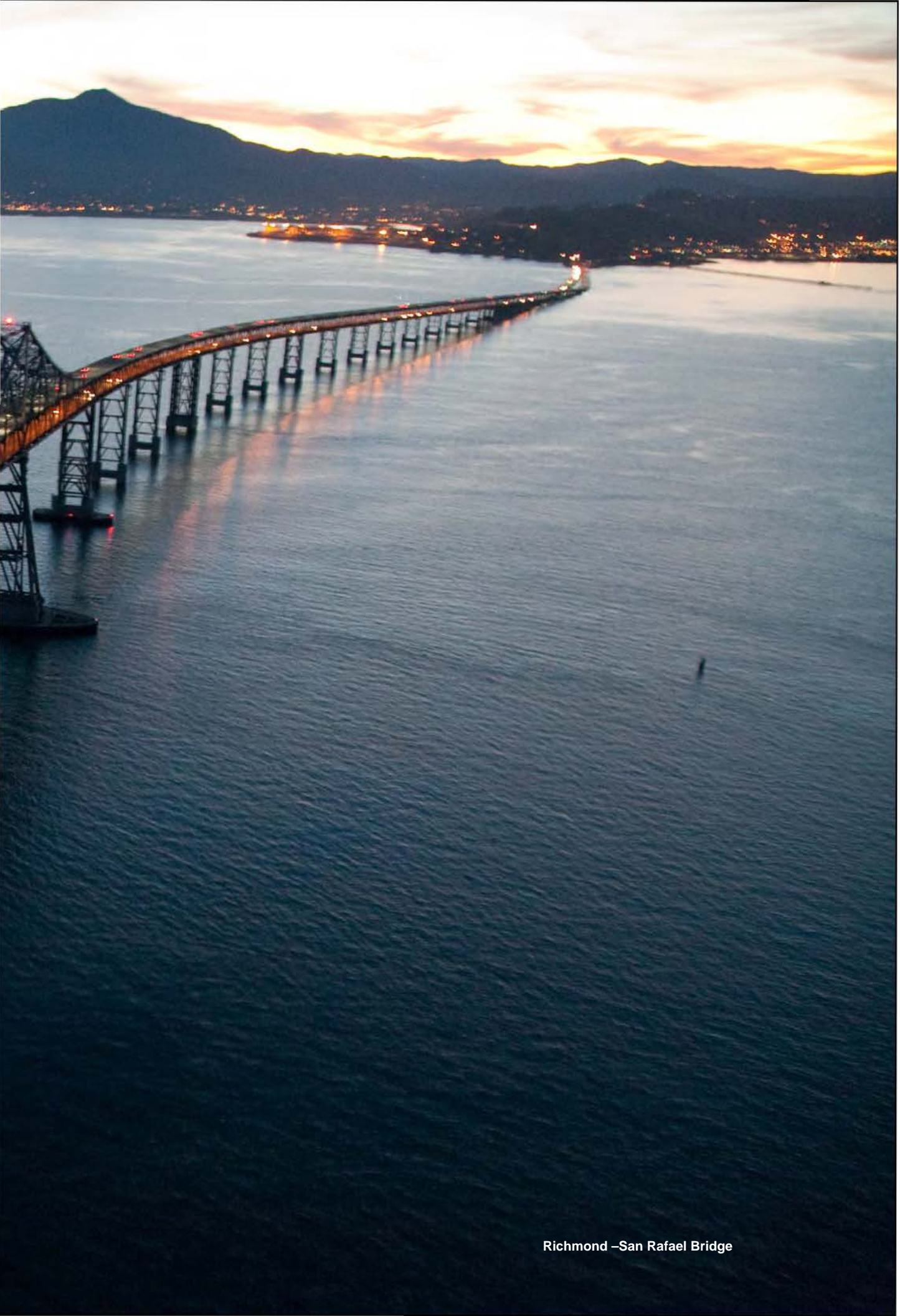












Richmond –San Rafael Bridge

# REGIONAL MEASURE 1 TOLL BRIDGE PROGRAM

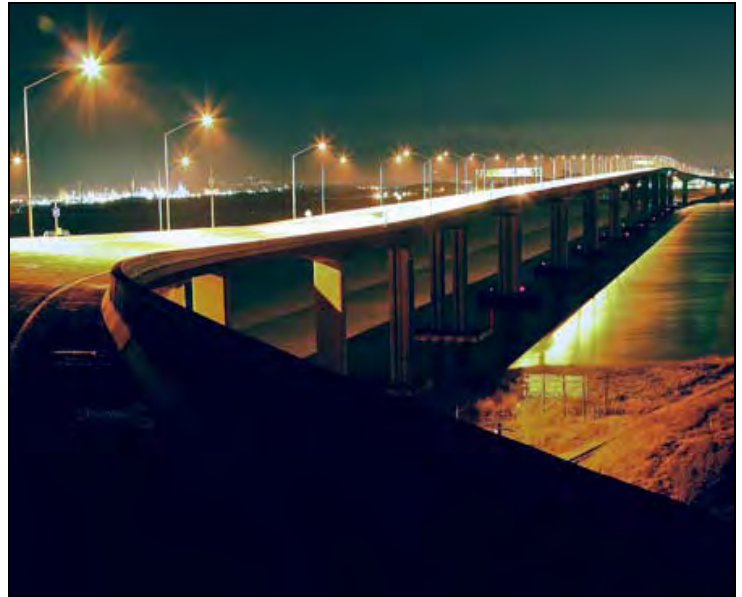
## REGIONAL MEASURE 1 PROGRAM

### New Benicia-Martinez Bridge Project

#### Project Status: New Bridge Completed 2007

The new Congressman George Miller Bridge opened to traffic in August 2007, taking its place alongside the existing 1962 Benicia-Martinez Bridge, which is named for Congressman Miller's father, the late George Miller, Jr. The new bridge carries five lanes of northbound Interstate 680 traffic, while the existing bridge is being upgraded to carry four lanes of southbound traffic and a new bicycle/pedestrian pathway.

Decades into the planning and construction, the new bridge is designed to a "Lifeline" seismic design standard, expected to be available for emergency response vehicles soon after a major seismic event. Constructed of lightweight concrete, the structure is one of the longest post-tensioned reinforced cast-in-place concrete bridges in the world. The new toll plaza, relocated from Benicia to Martinez, features the Bay Area's first FasTrak® express lanes, which vastly increase the throughput of vehicles using electronic toll collection.



New Benicia-Martinez Bridge Opened to Traffic in August 2007

### 1962 Benicia-Martinez Bridge Reconstruction Contract

Contractor: ACC/Top Grade, Joint Venture

Approved Capital Outlay Budget: \$59.5 M

Status: Complete

A two-year project to rehabilitate and reconfigure the original Benicia-Martinez Bridge began shortly after the opening of the new Congressman George Miller Bridge. The existing 1.2-mile roadway surface on the steel deck truss bridge is being modified to carry four lanes of southbound traffic (one more than before)—with shoulders on both sides—plus a bicycle/pedestrian path on the west side of the span that will connect to Park Road in Benicia and to Marina Vista Boulevard in Martinez.

#### ***Stage 1 – Reconstruction of East Side of Bridge and Approaches***

Completed in August 2008, this stage involved removal of the old toll plaza on the Benicia side of the bridge, deck repairs on the east side of the span, and repair of the roadway undulations on the southern approach just south of the Marina Vista interchange.



Mococo Road Bridge Jacking



## ***Stage 2 – Reconstruction of West Side of Bridge and Approaches and Construction of Bicycle/Pedestrian Pathway***

This stage began after southbound traffic was shifted from the west side of the bridge to the newly refurbished east side. It involves repairing the west-side bridge deck, repairing undulations on the west side of the roadway in Martinez, demolishing obsolete I-680/I-780 interchange structures, realigning southbound Interstate 680 for four lanes, and construction of the barrier separating traffic lanes from the bicycle/pedestrian path.

**Status:** A new southbound I-680 was opened to traffic in early August. The new bicycle/pedestrian path opened on August 29. The contract is now complete.



**Benicia-Martinez Bridge Newly Opened Pedestrian/Bicycle Pathway**



**Benicia-Martinez Bridge Pedestrian/Bicycle Pathway Opened to The Public**

## REGIONAL MEASURE 1 PROGRAM

### Interstate 880/State Route 92 Interchange Reconstruction Project

**Project Status: Under Construction**

The Interstate 880/State Route 92 Interchange Reconstruction Project is the final project under the Regional Measure 1 Toll Bridge Program. Project completion fulfills a promise made to Bay Area voters in 1988 to deliver a slate of projects that help expand bridge capacity and improve safety on the bridges.

This corridor is consistently one of the Bay Area's most congested during the evening commute. This is due in part to the lane merging and weaving that is required by the existing cloverleaf interchange. The new interchange will feature direct freeway-to-freeway connector ramps that will increase traffic capacity and improve overall safety and traffic operations in the area. With the new direct-connector ramps, drivers coming off the San Mateo-Hayward Bridge can access Interstate 880 without having to compete with traffic headed onto east Route 92 from south Interstate 880 (see progress photos on pages 74 and 75).



Future Interstate 880/State Route 92 Interchange (as simulated) ,Looking West toward San Mateo.

### Interstate 880/State Route 92 Interchange Reconstruction Contract

Contractor: Flatiron/Granite

Approved Capital Outlay Budget: \$155.0 M

Status: ?% Complete As Of November 2009



Overview of Progress to Date



Bents 2, 3 and 4 of the I-880/SR92 Interchange New Separation Bridge



### **Stage 1 – Construct East Route 92 to North Interstate 880 Connector**

The new east Route 92 to north Interstate 880 connector (ENCONN) is the most critical flyover structure for relieving congestion in the corridor. The ENCONN will be first used as a detour to allow for future stages of work, while keeping traffic flowing.

**Status:** ENCONN was completed and opened to detour traffic on May 16, 2009.

### **Stage 2 – Replace South Side of Route 92 Separation Structure**

By detouring eastbound Route 92 traffic onto ENCONN, the existing separation structure that carries SR92 over I-880 can be replaced. The existing structure will be cut lengthwise, and then demolished and replaced separately. In this stage, the south side of the structure will be replaced, while west Route 92 and south-Interstate-880-to-east-Route-92 traffic will stay on the remaining structure.

**Status:** Work on the south side of the separation structure has begun. Foundations and columns have been installed.

### **Stage 3 – Replace North Side of Route 92 Separation Structure**

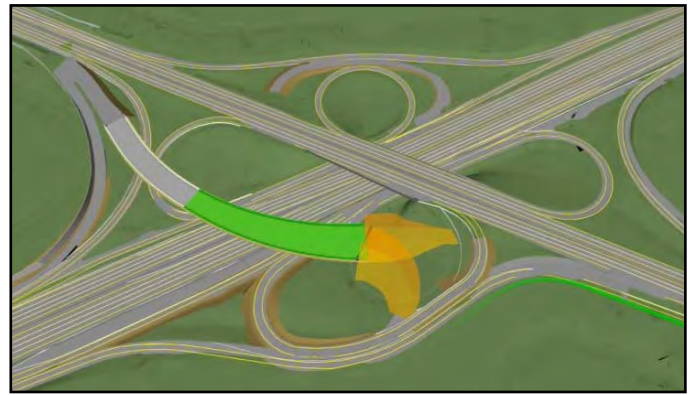
Upon completion of Stage 2, the existing north side of the separation structure will be demolished and replaced. Its traffic will then be shifted onto the newly reconstructed south side.

**Status:** Pending Stage 2.

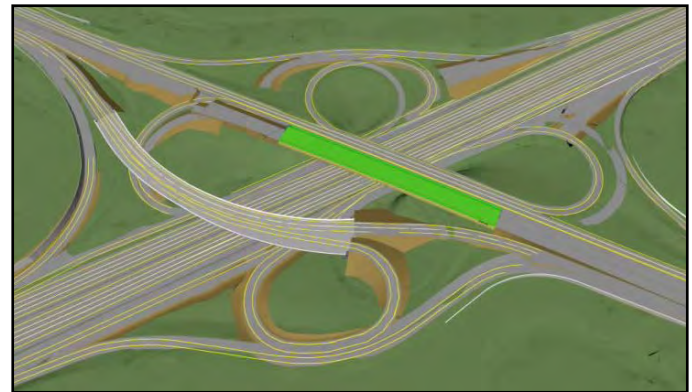
### **Stage 4 – Final Realignment and Other Work**

Upon completion of the Route 92 separation structure, east Route 92 traffic can be shifted onto its permanent alignment from the new ENCONN and directly under the new separation structure. Along with the ENCONN and Route 92 separation structures, several soundwalls, a pedestrian overcrossing on I-880 at Eldridge Avenue and other ramps and structures will also be reconstructed as part of this project.

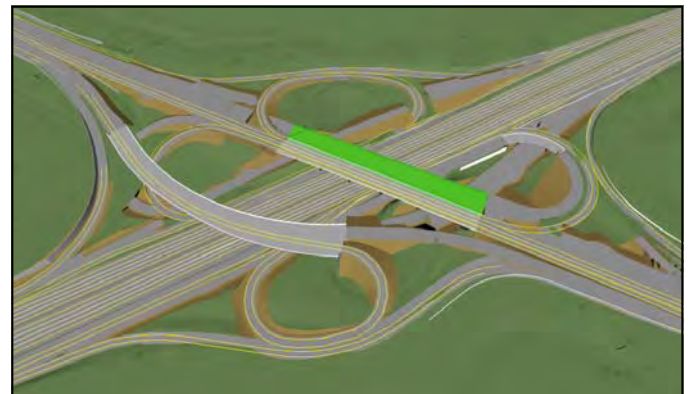
**Status:** Work continues on walls in the northwest (Stage 2), southeast and northeast quadrants, as well as on the Eldridge Ave. pedestrian overcrossing. The new pump station is ongoing and scheduled to be completed in February 2010. The Calaroga Bridge is 50 percent complete.



Stage 1 - Construct East Route 92 to North Interstate 880 Direct Connector



Stage 2 - Demolish and Replace South Side of Route 92 Separation Structure



Stage 3 - Demolish and Replace North Side of Route 92 Separation Structure



Stage 4 - Final Realignment and Other Work



## REGIONAL MEASURE 1 PROGRAM

### Other Completed Projects

#### San Mateo-Hayward Bridge-Widening Project

**Project Status: Completed 2003**



This project expanded the low-rise concrete trestle section of the San Mateo-Hayward Bridge to allow for three lanes in each direction to match the existing configuration of the high-rise steel section of the bridge.

Widening of the San Mateo-Hayward Bridge Trestle on Left

#### Richmond-San Rafael Bridge Rehabilitation Projects

**Project Status: Completed 2006**

Two major rehabilitation projects for the Richmond-San Rafael Bridge were funded and completed:

- (1) replacement of the western concrete approach trestle and ship-collision protection fender system; and
- (2) rehabilitation of deck joints and resurfacing of the bridge deck.

In 2005, along with the seismic retrofit of the bridge, the trestle and fender replacement work was completed as part of the same project. Under a separate contract in 2006, the bridge was resurfaced with a polyester concrete overlay along with the repair of numerous deck joints.



New Richmond-San Rafael Bridge West Approach Trestle under Construction

#### Richmond Parkway Construction Project

**Project Status: Completed 2001**

The final connections to the Richmond Parkway from Interstate 580 near the Richmond-San Rafael Bridge were completed in May 2001.



New Alfred Zampa Memorial (Carquinez) Bridge Soon after Opening to Traffic, with Crockett Interchange Still under Construction

## **New Alfred Zampa Memorial (Carquinez) Bridge Project**

### **Project Status: Completed 2003**

The new western span of the Carquinez Bridge, which replaced the original 1927 span, is a twin-towered suspension bridge with three mixed-flow lanes, a new carpool lane, shoulders and a bicycle and pedestrian pathway.

## **Bayfront Expressway (State Route 84) Widening Project**

### **Project Status: Completed 2004**

This project expanded and improved the roadway from the Dumbarton Bridge touchdown to the US 101/Marsh Road interchange by adding additional lanes and turn pockets and improving bicycle and pedestrian access in the area.





Aerial View of the Existing Bridge and the Completed Skyway on the Right





## APPENDICES

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## Appendix A-1: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through November 30, 2009 (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2009)	Cost To Date (10/2009)	Cost Forecast (10/2009)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>SFOBB East Span Replacement Project</b>						
Capital Outlay Support	959.3	-	959.3	781.9	1,203.1	243.8
Capital Outlay Construction	4,492.2	269.4	4,761.6	3,101.2	5,041.1	279.5
Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
<b>Total</b>	<b>5,486.6</b>	<b>266.1</b>	<b>5,752.7</b>	<b>3,883.8</b>	<b>6,251.9</b>	<b>499.2</b>
<b>SFOBB West Approach Replacement</b>						
Capital Outlay Support	120.0	-	120.0	116.7	117.0	(3.0)
Capital Outlay Construction	309.0	41.7	350.7	328.1	338.1	(12.6)
<b>Total</b>	<b>429.0</b>	<b>41.7</b>	<b>470.7</b>	<b>444.8</b>	<b>455.1</b>	<b>(15.6)</b>
<b>SFOBB West Span Retrofit</b>						
Capital Outlay Support	75.0	-	75.0	74.8	75.0	-
Capital Outlay Construction	232.9	-	232.9	227.2	232.9	-
<b>Total</b>	<b>307.9</b>	<b>-</b>	<b>307.9</b>	<b>302.0</b>	<b>307.9</b>	<b>-</b>
<b>Richmond-San Rafael Bridge Retrofit</b>						
Capital Outlay Support	134.0	(7.0)	127.0	126.7	127.0	-
Capital Outlay Construction	780.0	(90.5)	689.5	667.5	689.5	-
<b>Total</b>	<b>914.0</b>	<b>(97.5)</b>	<b>816.5</b>	<b>794.2</b>	<b>816.5</b>	<b>-</b>
<b>Benicia-Martinez Bridge Retrofit</b>						
Capital Outlay Support	38.1	-	38.1	38.1	38.1	-
Capital Outlay Construction	139.7	-	139.7	139.7	139.7	-
<b>Total</b>	<b>177.8</b>	<b>-</b>	<b>177.8</b>	<b>177.8</b>	<b>177.8</b>	<b>-</b>
<b>Carquinez Bridge Retrofit</b>						
Capital Outlay Support	28.7	-	28.7	28.8	28.7	-
Capital Outlay Construction	85.5	-	85.5	85.4	85.5	-
<b>Total</b>	<b>114.2</b>	<b>-</b>	<b>114.2</b>	<b>114.2</b>	<b>114.2</b>	<b>-</b>
<b>San Mateo-Hayward Bridge Retrofit</b>						
Capital Outlay Support	28.1	-	28.1	28.1	28.1	-
Capital Outlay Construction	135.4	-	135.4	135.3	135.4	-
<b>Total</b>	<b>163.5</b>	<b>-</b>	<b>163.5</b>	<b>163.4</b>	<b>163.5</b>	<b>-</b>
<b>Vincent Thomas Bridge Retrofit (Los Angeles)</b>						
Capital Outlay Support	16.4	-	16.4	16.4	16.4	-
Capital Outlay Construction	42.1	-	42.1	42.0	42.1	-
<b>Total</b>	<b>58.5</b>	<b>-</b>	<b>58.5</b>	<b>58.4</b>	<b>58.5</b>	<b>-</b>
<b>San Diego-Coronado Bridge Retrofit</b>						
Capital Outlay Support	33.5	-	33.5	33.2	33.5	-
Capital Outlay Construction	70.0	-	70.0	69.4	70.0	-
<b>Total</b>	<b>103.5</b>	<b>-</b>	<b>103.5</b>	<b>102.6</b>	<b>103.5</b>	<b>-</b>
<b>Subtotal Capital Outlay Support</b>						
	1,433.1	(7.0)	1,426.1	1,244.7	1,666.9	240.8
<b>Subtotal Capital Outlay</b>						
	6,286.8	220.6	6,507.4	4,795.8	6,774.3	266.9
<b>Subtotal Other Budgeted Capital</b>						
	35.1	(3.3)	31.8	0.7	7.7	(24.1)
<b>Miscellaneous Program Costs</b>						
	30.0	-	30.0	24.7	30.0	-
<b>Subtotal Toll Bridge Seismic Retrofit Program</b>						
	7,785.0	210.3	7,995.3	6,065.9	8,478.9	483.6
<b>Programatic Risk</b>						
	-	-	-	-	165.4	165.4
<b>Program Contingency</b>						
	900.0	(210.3)	689.7	-	40.7	(649.0)
<b>Total Toll Bridge Seismic Retrofit Program</b>						
	<b>8,685.0</b>	<b>-</b>	<b>8,685.0</b>	<b>6,065.9</b>	<b>8,685.0</b>	<b>-</b>

Note: Details may not sum to totals due to rounding effects.



## Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through November 30, 2009 (\$ Millions)

Bridge	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and Encumbrances as of Oct 2009 See Note (1)	Estimated Costs not yet Spent or Encumbered as of Oct 2009	Total Forecast as of Oct 2009
a	b	c	d	e	f = d + e
Other Completed Projects					
Capital Outlay Support	144.9	144.9	144.6	0.3	144.9
Capital Outlay	472.6	472.6	472.6	0.1	472.7
Total	617.5	617.5	617.2	0.4	617.6
Richmond-San Rafael					
Capital Outlay Support	134.0	127.0	126.7	0.3	127.0
Capital Outlay	698.0	689.5	674.2	15.3	689.5
Project Reserves	82.0	-	-	-	-
Total	914.0	816.5	800.9	15.6	816.5
West Span Retrofit					
Capital Outlay Support	75.0	75.0	74.8	0.2	75.0
Capital Outlay	232.9	232.9	232.7	0.2	232.9
Total	307.9	307.9	307.5	0.4	307.9
West Approach					
Capital Outlay Support	120.0	120.0	117.5	(0.5)	117.0
Capital Outlay	309.0	350.7	342.5	(4.4)	338.1
Total	429.0	470.7	460.0	(4.9)	455.1
SFOBB East Span - Skyway					
Capital Outlay Support	197.0	181.0	181.2	(0.1)	181.1
Capital Outlay	1,293.0	1,254.1	1,412.1	(158.0)	1,254.1
Total	1,490.0	1,435.1	1,593.3	(158.1)	1,435.2
SFOBB East Span - SAS- Superstructure					
Capital Outlay Support	214.6	214.6	191.0	221.9	412.9
Capital Outlay	1,753.7	1,753.7	1,649.6	364.5	2,014.1
Total	1,968.3	1,968.3	1,840.6	586.4	2,427.0
SFOBB East Span - SAS- Foundations					
Capital Outlay Support	62.5	41.0	37.6	1.0	38.6
Capital Outlay	339.9	307.3	308.7	(1.4)	307.3
Total	402.4	348.3	346.3	(0.4)	345.9
Small YBI Projects					
Capital Outlay Support	10.6	10.6	10.1	0.5	10.6
Capital Outlay	15.6	15.6	16.6	(0.9)	15.7
Total	26.2	26.2	26.7	(0.4)	26.3
YBI Detour					
Capital Outlay Support	29.5	66.0	76.4	9.1	85.5
Capital Outlay	131.9	492.8	493.0	11.0	504.0
Total	161.4	558.8	569.4	20.1	589.5
YBI - Transition Structures					
Capital Outlay Support	78.7	78.7	16.4	89.1	105.5
Capital Outlay	299.4	276.1	0.1	285.8	285.9
Total	378.1	354.8	16.5	374.9	391.4
Oakland Touchdown					
Capital Outlay Support	74.4	74.4	68.3	27.0	95.3
Capital Outlay	283.8	283.8	218.0	71.0	289.0
Total	358.2	358.2	286.3	98.0	384.3
East Span Other Small Project					
Capital Outlay Support	212.3	213.3	208.7	4.8	213.5
Capital Outlay	170.8	170.8	94.0	52.6	146.6
Total	383.1	384.1	302.7	57.4	360.1
Existing Bridge Demolition					
Capital Outlay Support	79.7	79.7	0.4	59.6	60.0
Capital Outlay	239.2	239.2	-	232.1	232.1
Total	318.9	318.9	0.4	291.7	292.1
Miscellaneous Program Costs	30.0	30.0	25.4	4.6	30.0
Total Capital Outlay Support (2)	1,463.2	1,456.2	1,279.1	417.8	1,696.9
Total Capital Outlay	6,321.8	6,539.1	5,914.1	867.9	6,782.0
Program Total	7,785.0	7,995.3	7,193.2	1,285.7	8,478.9

(1). Funds allocated to project or contract for Capital Outlay and Support needs includes Capital Outlay Support total allocation for FY 06/07.

(2). BSA provided a distribution of program contingency in December 2004 based on Bechtel Infrastructure Corporation input.

This column is subject to revision upon completion of Department's risk assessment update.

(3). Total Capital Outlay Support includes program indirect costs.

Notes: \* Budget for Richmond-San Rafael Bridge includes \$16.9 million of deck joint rehabilitation work that is considered to be eligible for seismic retrofit program funding.

Note: Details may not sum to totals due to rounding effects.



## Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through November 30, 2009 (\$ Millions)

Contract	EA Number	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2009)	Cost To Date (10/2009)	Cost Forecast (10/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>San Francisco-Oakland Bay Bridge</b>							
<b>East Span Replacement Project</b>							
<b>East Span - Skyway</b>	<b>01202X</b>						
Capital Outlay Support		197.0	(16.0)	181.0	181.1	181.1	0.1
Capital Outlay Construction		1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-
<b>Total</b>		<b>1,490.0</b>	<b>(54.9)</b>	<b>1,435.1</b>	<b>1,418.0</b>	<b>1,435.2</b>	<b>0.1</b>
<b>East Span - SAS E2/T1 Foundations</b>	<b>0120EX</b>						-
Capital Outlay Support		52.5	(21.5)	31.0	28.4	28.6	(2.4)
Capital Outlay Construction		313.5	(32.6)	280.9	275.0	280.9	-
<b>Total</b>		<b>366.0</b>	<b>(54.1)</b>	<b>311.9</b>	<b>303.4</b>	<b>309.5</b>	<b>(2.4)</b>
<b>East Span - SAS Superstructure</b>	<b>0120FX</b>						
Capital Outlay Support		214.6	-	214.6	186.9	412.9	198.3
Capital Outlay Construction		1,753.7	-	1,753.7	836.0	2,014.1	260.4
<b>Total</b>		<b>1,968.3</b>	<b>-</b>	<b>1,968.3</b>	<b>1,022.9</b>	<b>2,427.0</b>	<b>458.7</b>
<b>SAS W2 Foundations</b>	<b>0120CX</b>						
Capital Outlay Support		10.0	-	10.0	9.2	10.0	-
Capital Outlay Construction		26.4	-	26.4	25.8	26.4	-
<b>Total</b>		<b>36.4</b>	<b>-</b>	<b>36.4</b>	<b>35.0</b>	<b>36.4</b>	<b>-</b>
<b>YBI South/South Detour</b>	<b>0120RX</b>						
Capital Outlay Support		29.4	36.6	66.0	74.3	85.5	19.5
Capital Outlay Construction		132.0	360.8	492.8	399.3	504.0	11.2
<b>Total</b>		<b>161.4</b>	<b>397.4</b>	<b>558.8</b>	<b>473.6</b>	<b>589.5</b>	<b>30.7</b>
<b>YBI Transition Structures (see notes below)</b>	<b>0120PX</b>						
Capital Outlay Support		78.7	-	78.7	27.3	105.5	26.8
Capital Outlay Construction		299.3	(23.2)	276.1	-	285.9	9.8
<b>Total</b>		<b>378.0</b>	<b>(23.2)</b>	<b>354.8</b>	<b>27.3</b>	<b>391.4</b>	<b>36.6</b>
<b>* YBI- Transition Structures</b>							
<b>Contract No. 1</b>							
Capital Outlay Support					7.5	65.1	
Capital Outlay Construction					-	223.2	
<b>Total</b>					<b>7.5</b>	<b>288.3</b>	
<b>* YBI- Transition Structures</b>							
<b>Contract No. 2</b>							
Capital Outlay Support					3.3	23.4	
Capital Outlay Construction					-	59.4	
<b>Total</b>					<b>3.3</b>	<b>82.8</b>	
<b>* YBI- Transition Structures</b>							
<b>Contract No. 3 Landscape</b>							
Capital Outlay Support					-	1.0	
Capital Outlay Construction					-	3.3	
<b>Total</b>					<b>-</b>	<b>4.3</b>	
<b>Oakland Touchdown (see notes below)</b>							
<b>OTD Submarine Cable</b>	<b>01204X</b>						
Capital Outlay Support		74.4	-	74.4	66.4	95.3	20.9
Capital Outlay Construction		283.8	-	283.8	196.9	289.0	5.2
<b>Total</b>		<b>358.2</b>	<b>-</b>	<b>358.2</b>	<b>263.3</b>	<b>384.3</b>	<b>26.1</b>
<b>* OTD Submarine Cable</b>							
Capital Outlay Support					0.9	0.9	
Capital Outlay Construction					7.9	9.6	
<b>Total</b>					<b>8.8</b>	<b>10.5</b>	
<b>* OTD No. 1 (Westbound)</b>							
Capital Outlay Support					40.1	50.4	
Capital Outlay Construction					189.1	211.0	
<b>Total</b>					<b>229.2</b>	<b>261.4</b>	
<b>* OTD No. 2 (Eastbound)</b>							
Capital Outlay Support					4.6	20.5	
Capital Outlay Construction					-	64.0	
<b>Total</b>					<b>4.6</b>	<b>84.5</b>	
<b>* OTD Electrical Systems</b>							
Capital Outlay Support					0.8	1.5	
Capital Outlay Construction					-	4.4	
<b>Total</b>					<b>0.8</b>	<b>5.9</b>	

Notes: YBI Transition Structures and Oakland Touchdown Cost-to-Date and Cost Forecast includes prior-to-split Capital Outlay

Note: Details may not sum to totals due to rounding effects.

## Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through November 30, 2009 (\$ Millions) (continued)

Contract	EA Number	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2009)	Cost To Date (10/2009)	Cost Forecast (10/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>Existing Bridge Demolition</b>	<b>01209X</b>						
Capital Outlay Support		79.7	-	79.7	0.4	60.0	(19.7)
Capital Outlay Construction		239.2	-	239.2	-	232.1	(7.1)
<b>Total</b>		<b>318.9</b>	<b>-</b>	<b>318.9</b>	<b>0.4</b>	<b>292.1</b>	<b>(26.8)</b>
<b>YBI/SAS Archeology</b>	<b>01207X</b>						
Capital Outlay Support		1.1	-	1.1	1.1	1.1	-
Capital Outlay Construction		1.1	-	1.1	1.1	1.1	-
<b>Total</b>		<b>2.2</b>	<b>-</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>-</b>
<b>YBI - USCG Road Relocation</b>	<b>0120QX</b>						
Capital Outlay Support		3.0	-	3.0	2.7	3.0	-
Capital Outlay Construction		3.0	-	3.0	2.8	3.0	-
<b>Total</b>		<b>6.0</b>	<b>-</b>	<b>6.0</b>	<b>5.5</b>	<b>6.0</b>	<b>-</b>
<b>YBI - Substation and Viaduct</b>	<b>0120GX</b>						
Capital Outlay Support		6.5	-	6.5	6.4	6.5	-
Capital Outlay Construction		11.6	-	11.6	11.3	11.6	-
<b>Total</b>		<b>18.1</b>	<b>-</b>	<b>18.1</b>	<b>17.7</b>	<b>18.1</b>	<b>-</b>
<b>Oakland Geofill</b>	<b>01205X</b>						
Capital Outlay Support		2.5	-	2.5	2.5	2.5	-
Capital Outlay Construction		8.2	-	8.2	8.2	8.2	-
<b>Total</b>		<b>10.7</b>	<b>-</b>	<b>10.7</b>	<b>10.7</b>	<b>10.7</b>	<b>-</b>
<b>Pile Installation Demonstration Project</b>	<b>01208X</b>						
Capital Outlay Support		1.8	-	1.8	1.8	1.8	-
Capital Outlay Construction		9.2	-	9.2	9.2	9.2	-
<b>Total</b>		<b>11.0</b>	<b>-</b>	<b>11.0</b>	<b>11.0</b>	<b>11.0</b>	<b>-</b>
<b>Stormwater Treatment Measures</b>	<b>0120JX</b>						
Capital Outlay Support		6.0	2.0	8.0	8.1	8.2	0.2
Capital Outlay Construction		15.0	3.3	18.3	16.7	18.3	-
<b>Total</b>		<b>21.0</b>	<b>5.3</b>	<b>26.3</b>	<b>24.8</b>	<b>26.5</b>	<b>0.2</b>
<b>Right-of-Way and Environmental Mitigation</b>	<b>0120X9</b>						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay & Right-of-Way		72.4	-	72.4	51.2	72.4	-
<b>Total</b>		<b>72.4</b>	<b>-</b>	<b>72.4</b>	<b>51.2</b>	<b>72.4</b>	<b>-</b>
<b>Sunk Cost - Existing East Span Retrofit</b>	<b>04343X &amp; 04300X</b>						
Capital Outlay Support		39.5	-	39.5	39.5	39.5	-
Capital Outlay Construction		30.8	-	30.8	30.8	30.8	-
<b>Total</b>		<b>70.3</b>	<b>-</b>	<b>70.3</b>	<b>70.3</b>	<b>70.3</b>	<b>-</b>
<b>Other Capital Outlay Support</b>							
Environmental Phase		97.7	-	97.7	97.7	97.7	-
Pre-Split Project Expenditures		44.9	-	44.9	44.9	44.9	-
Non-project Specific Costs		20.0	(1.0)	19.0	3.2	19.0	-
<b>Total</b>		<b>162.6</b>	<b>(1.0)</b>	<b>161.6</b>	<b>145.8</b>	<b>161.6</b>	<b>-</b>
<b>Subtotal Capital Outlay Support</b>		<b>959.3</b>	<b>-</b>	<b>959.3</b>	<b>781.9</b>	<b>1,203.1</b>	<b>243.8</b>
<b>Subtotal Capital Outlay Construction</b>		<b>4,492.2</b>	<b>269.4</b>	<b>4,761.6</b>	<b>3,101.2</b>	<b>5,041.1</b>	<b>279.5</b>
<b>Other Budgeted Capital</b>		<b>35.1</b>	<b>(3.3)</b>	<b>31.8</b>	<b>0.7</b>	<b>7.7</b>	<b>(24.1)</b>
<b>Total SFOBB East Span Replacement Project</b>		<b>5,486.6</b>	<b>266.1</b>	<b>5,752.7</b>	<b>3,883.8</b>	<b>6,251.9</b>	<b>499.2</b>

Note: Details may not sum to totals due to rounding effects.

## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions)

Project	EA Number	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (11/2009)	Cost To Date (11/2009)	Cost Forecast (11/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>New Benicia-Martinez Bridge Project</b>							
<b>New Bridge</b>	<b>00603_</b>						
Capital Outlay Support							
BATA Funding		84.9	6.9	91.8	91.8	91.8	-
Non-BATA Funding		-	0.1	0.1	0.1	0.1	-
Subtotal		84.9	7.0	91.9	91.9	91.9	-
Capital Outlay Construction				-			-
BATA Funding		661.9	94.6	756.5	753.8	756.5	-
Non-BATA Funding		10.1	-	10.1	10.1	10.1	-
Subtotal		672.0	94.6	766.6	763.9	766.6	-
<b>Total</b>		756.9	101.6	858.5	855.8	858.5	-
<b>I-680/I-780 Interchange Reconstruction</b>							
<b>00606_</b>							
Capital Outlay Support							
BATA Funding		24.9	5.2	30.1	30.1	30.1	-
Non-BATA Funding		1.4	5.2	6.6	6.3	6.6	-
Subtotal		26.3	10.4	36.7	36.4	36.7	-
Capital Outlay Construction							
BATA Funding		54.7	26.9	81.6	77.1	81.6	-
Non-BATA Funding		21.6	-	21.6	21.7	21.6	-
Subtotal		76.3	26.9	103.2	98.8	103.2	-
<b>Total</b>		102.6	37.3	139.9	135.2	139.9	-
<b>I-680/Marina Vista Interchange Reconstruction</b>							
<b>00605_</b>							
Capital Outlay Support		18.3	1.8	20.1	20.1	20.1	-
Capital Outlay Construction		51.5	4.9	56.4	56.1	56.4	-
<b>Total</b>		69.8	6.7	76.5	76.2	76.5	-
<b>New Toll Plaza and Administration Building</b>							
<b>00604_</b>							
Capital Outlay Support		11.9	3.8	15.7	15.7	15.7	-
Capital Outlay Construction		24.3	2.0	26.3	25.1	26.3	-
<b>Total</b>		36.2	5.8	42.0	40.8	42.0	-
<b>Existing Bridge &amp; Interchange Modifications</b>							
<b>0060A_</b>							
Capital Outlay Support							
BATA Funding		4.3	13.5	17.8	17.6	17.8	-
Non-BATA Funding		-	0.9	0.9	0.8	0.9	-
Subtotal		4.3	14.4	18.7	18.4	18.7	-
Capital Outlay Construction							
BATA Funding		17.2	32.8	50.0	36.5	50.0	-
Non-BATA Funding		-	9.5	9.5	-	9.5	-
Subtotal		17.2	42.3	59.5	36.5	59.5	-
<b>Total</b>		21.5	56.7	78.2	54.9	78.2	-
<b>Other Contracts</b>							
<b>See note below</b>							
Capital Outlay Support		11.4	(2.3)	9.1	8.7	9.1	-
Capital Outlay Construction		20.3	3.3	23.6	17.3	23.6	-
Capital Outlay Right-of-Way		20.4	(0.1)	20.3	17.0	20.3	-
<b>Total</b>		52.1	0.9	53.0	43.0	53.0	-
Subtotal BATA Capital Outlay Support		155.7	28.9	184.6	184.0	184.6	-
Subtotal BATA Capital Outlay Construction		829.9	164.5	994.4	965.9	994.4	-
Subtotal Capital Outlay Right-of-Way		20.4	(0.1)	20.3	17.0	20.3	-
Subtotal Non-BATA Capital Outlay Support		1.4	6.2	7.6	7.2	7.6	-
Subtotal Non-BATA Capital Outlay Construction		31.7	9.5	41.2	31.8	41.2	-
Project Reserves		20.8	3.6	24.4	-	24.4	-
<b>Total New Benicia-Martinez Bridge Project</b>		<b>1,059.9</b>	<b>212.6</b>	<b>1,272.5</b>	<b>1,205.9</b>	<b>1,272.5</b>	<b>-</b>

Notes: Includes EA's 00601\_, 00603\_, 00605\_, 00606\_, 00608\_, 00609\_, 0060A\_, 0060C\_, 0060E\_, 0060F\_, 0060G\_, and 0060H\_ and all Project Right-of-Way

Note: Details may not sum to totals due to rounding effects.



## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) (Continued)

Project	EA Number	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (11/2009)	Cost To Date (11/2009)	Cost Forecast (11/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>Carquinez Bridge Replacement Project</b>							
<b>New Bridge</b>	<b>01301_</b>						
Capital Outlay Support		60.5	(0.3)	60.2	60.2	60.2	-
Capital Outlay Construction		253.3	2.7	256.0	255.9	256.0	-
<b>Total</b>		313.8	2.4	316.2	316.1	316.2	-
<b>Crockett Interchange Reconstruction</b>							
	<b>01305_</b>						
Capital Outlay Support		32.0	(0.1)	31.9	31.9	31.9	-
Capital Outlay Construction		73.9	(1.9)	72.0	71.9	72.0	-
<b>Total</b>		105.9	(2.0)	103.9	103.8	103.9	-
<b>Existing 1927 Bridge Demolition</b>							
	<b>01309_</b>						
Capital Outlay Support		16.1	(0.5)	15.6	15.6	15.6	-
Capital Outlay Construction		35.2	-	35.2	34.8	35.2	-
<b>Total</b>		51.3	(0.5)	50.8	50.4	50.8	-
<b>Other Contracts</b>							
	<b>See note below</b>						
Capital Outlay Support		15.8	1.2	17.0	16.3	17.0	-
Capital Outlay Construction		18.8	(1.2)	17.6	16.2	17.6	-
Capital Outlay Right-of-Way		10.5	(0.1)	10.4	9.9	10.4	-
<b>Total</b>		45.1	(0.1)	45.0	42.4	45.0	-
Subtotal BATA Capital Outlay Support		124.4	0.3	124.7	124.0	124.7	-
Subtotal BATA Capital Outlay Construction		381.2	(0.4)	380.8	378.8	380.8	-
Subtotal Capital Outlay Right-of-Way		10.5	(0.1)	10.4	9.9	10.4	-
Project Reserves		12.1	(9.8)	2.3	-	2.3	-
<b>Total Carquinez Bridge Replacement Project</b>		528.2	(10.0)	518.2	512.7	518.2	-

## Notes:

Other Contracts includes EA's 01301\_, 01302\_, 01303\_, 01304\_, 01305\_, 01306\_, 01307\_, 01308\_, 01309\_, 0130A\_, 0130C\_, 0130D\_, 0130F\_, 0130G\_, 0130H\_, 0130J\_, 00453\_, 00493\_, 04700\_, 00607\_, 2A270\_, and 29920\_ and all Project Right-of-Way

Note: Details may not sum to totals due to rounding effects.

## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) (Continued)

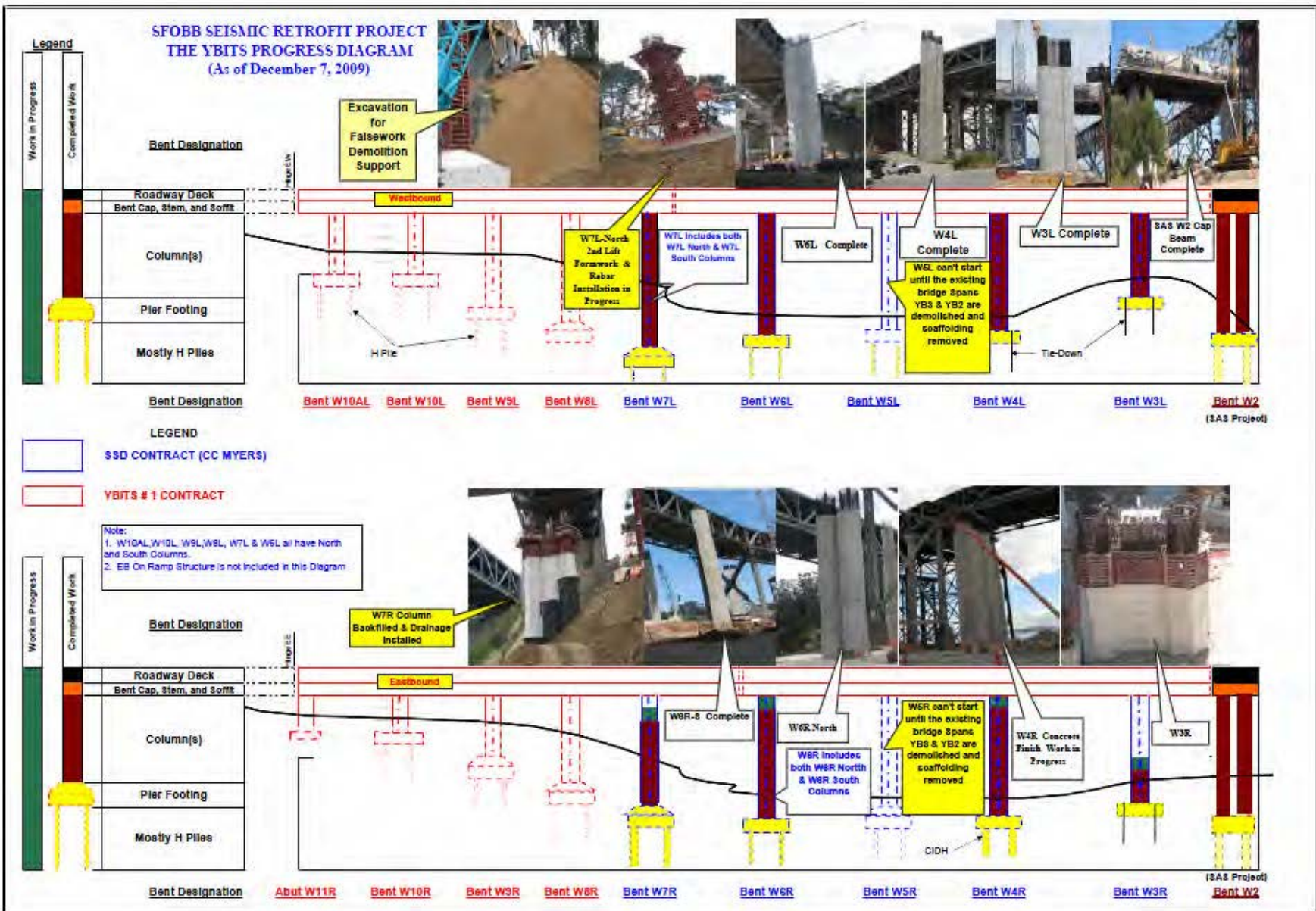
Project a	EA Number b	BATA Budget (07/2005) c	Approved Changes d	Current Approved Budget (11/2009) e = c + d	Cost To Date (11/2009) f	Cost Forecast (11/2009) g	At- Completion Variance h = g - e
Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation		See note <sup>1</sup> below					
Capital Outlay Support							
BATA Funding		2.2	(0.8)	1.4	1.4	1.4	-
Non-BATA Funding		8.6	1.8	10.4	10.4	10.4	-
Subtotal		10.8	1.0	11.8	11.8	11.8	-
Capital Outlay Construction							
BATA Funding		40.2	(6.8)	33.4	33.3	33.4	-
Non-BATA Funding		51.1	-	51.1	51.1	51.1	-
Subtotal		91.3	(6.8)	84.5	84.4	84.5	-
Project Reserves		-	0.8	0.8	-	0.8	-
<b>Total</b>		<b>102.1</b>	<b>(5.0)</b>	<b>97.1</b>	<b>96.2</b>	<b>97.1</b>	<b>-</b>
Rehabilitation		04152_					
Capital Outlay Support							
BATA Funding		4.0	(0.7)	3.3	3.3	3.3	-
Non-BATA Funding		4.0	(4.0)	-	-	-	-
Subtotal		8.0	(4.7)	3.3	3.3	3.3	-
Capital Outlay Construction		16.9	(0.6)	16.3	16.3	16.3	-
Project Reserves		0.1	0.3	0.4	-	0.4	-
<b>Total</b>		<b>25.0</b>	<b>(5.0)</b>	<b>20.0</b>	<b>19.6</b>	<b>20.0</b>	<b>-</b>
Richmond Parkway Project (RM 1 Share Only)		Non-Caltrans					
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay Construction		5.9	-	5.9	4.3	5.9	-
<b>Total</b>		<b>5.9</b>	<b>-</b>	<b>5.9</b>	<b>4.3</b>	<b>5.9</b>	<b>-</b>
San Mateo-Hayward Bridge Widening		See note <sup>2</sup> below					
Capital Outlay Support		34.6	(0.5)	34.1	34.1	34.1	-
Capital Outlay Construction		180.2	(6.1)	174.1	174.1	174.1	-
Capital Outlay Right-of-Way		1.5	(0.9)	0.6	0.5	0.6	-
Project Reserves		1.5	(0.5)	1.0	-	1.0	-
<b>Total</b>		<b>217.8</b>	<b>(8.0)</b>	<b>209.8</b>	<b>208.7</b>	<b>209.8</b>	<b>-</b>
I-880/SR-92 Interchange Reconstruction		EA's 23317_, 01601_, and 01602_					
Capital Outlay Support		28.8	34.6	63.4	50.7	63.4	-
Capital Outlay Construction							
BATA Funding		85.2	60.2	145.4	80.8	145.4	-
Non-BATA Funding		9.6	-	9.6	-	9.6	-
Subtotal		94.8	60.2	155.0	80.8	155.0	-
Capital Outlay Right-of-Way		9.9	7.0	16.9	11.9	16.9	-
Project Reserves		0.3	9.4	9.7	-	9.7	-
<b>Total</b>		<b>133.8</b>	<b>111.2</b>	<b>245.0</b>	<b>143.4</b>	<b>245.0</b>	<b>-</b>
Bayfront Expressway Widening		EA's 00487_, 01511_, and 01512_					
Capital Outlay Support		8.6	(0.2)	8.4	8.3	8.4	-
Capital Outlay Construction		26.5	(1.5)	25.0	24.9	25.0	-
Capital Outlay Right-of-Way		0.2	-	0.2	0.2	0.2	-
Project Reserves		0.8	(0.3)	0.5	-	0.5	-
<b>Total</b>		<b>36.1</b>	<b>(2.0)</b>	<b>34.1</b>	<b>33.4</b>	<b>34.1</b>	<b>-</b>
US 101/University Avenue Interchange Modification		Non-Caltrans					
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay Construction		3.8	-	3.8	3.7	3.8	-
<b>Total</b>		<b>3.8</b>	<b>-</b>	<b>3.8</b>	<b>3.7</b>	<b>3.8</b>	<b>-</b>
Subtotal BATA Capital Outlay Support		358.3	61.6	419.9	405.8	419.9	-
Subtotal BATA Capital Outlay Construction		1,569.8	209.3	1,779.1	1,682.1	1,779.1	-
Subtotal Capital Outlay Right-of-Way		42.5	5.9	48.4	39.5	48.4	-
Subtotal Non-BATA Capital Outlay Support		14.0	4.0	18.0	17.6	18.0	-
Subtotal Non-BATA Capital Outlay Construction		92.4	9.5	101.9	82.9	101.9	-
Project Reserves		35.6	3.5	39.1	-	39.1	-
<b>Total RM1 Program</b>		<b>2,112.6</b>	<b>293.8</b>	<b>2,406.4</b>	<b>2,227.9</b>	<b>2,406.4</b>	<b>-</b>

Notes:

1 Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation Includes Non-TBSRA Expenses for EA 0438U\_ and 04157\_

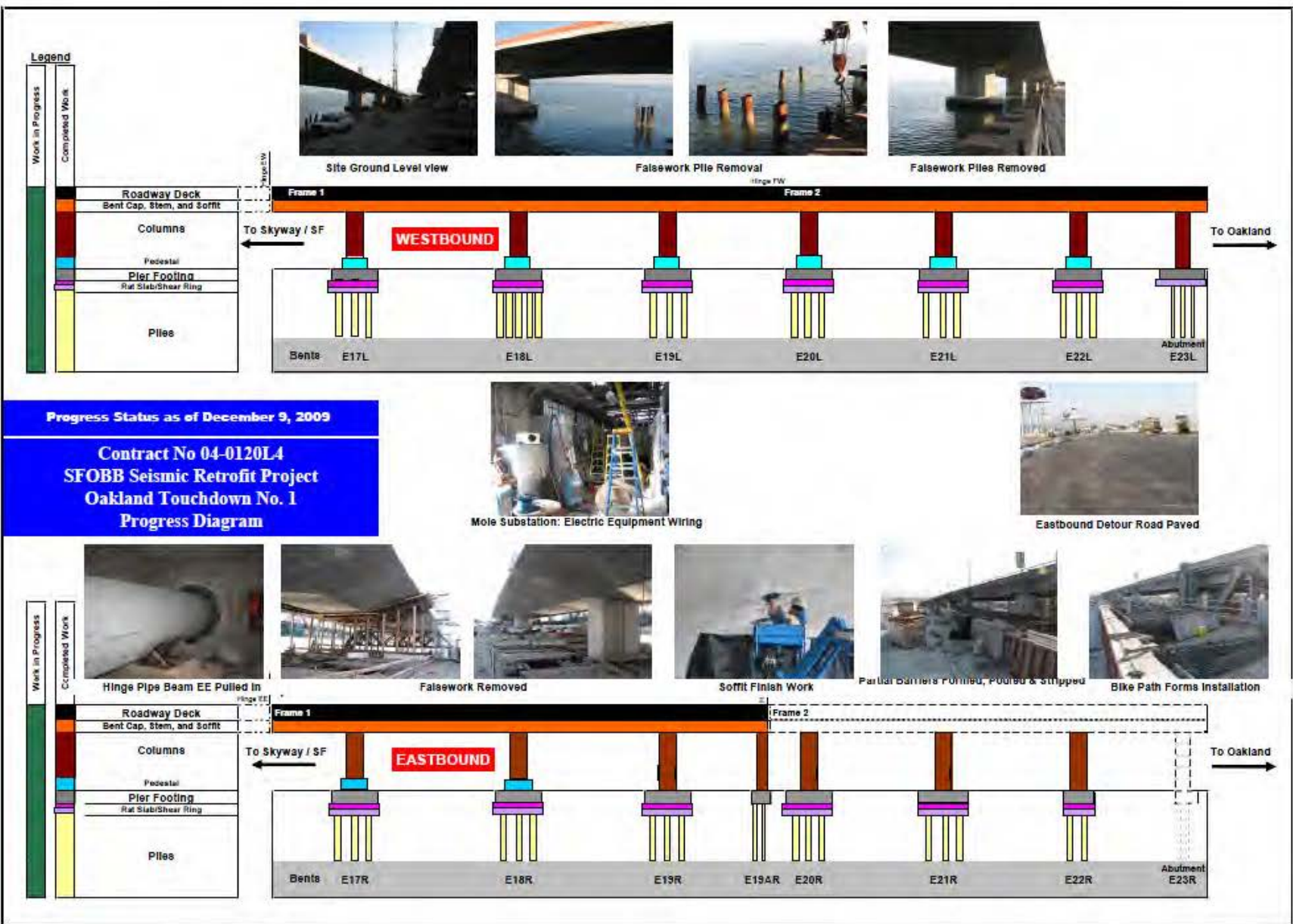
2 San Mateo-Hayward Bridge Widening Includes EA's 00305\_, 04501\_, 04502\_, 04503\_, 04504\_, 04505\_, 04506\_, 04507\_, 04508\_, 04509\_, 27740\_, 27790\_, 04860\_

Note: Details may not sum to totals due to rounding effects.





# Appendix E: OTD #1 Program Diagram





Appendix F: Project Progress Photographs

Skyway Piers Looking West



## Appendix F: Project Progress Photographs

### Yerba Buena Island Detour



YBID Span YB3 Demolished and Removed



YBID Span YB4 Demolition in Progress





Existing Viaduct Bridge Spans Being Demolished to the Left and the Detour Structure to the Right



## Appendix F: Project Progress Photographs

### Self-Anchored Suspension Bridge Fabrication



SAS OBG Lift 11 Assembly in Bay 13



SAS Bearing Stiffener Being Fitted to the Lift 1 East Shaft



SAS Tower Overview of Heavy Duty Shop 1



SAS OBG 3W Being Loaded onto the Ship



## Appendix F: Project Progress Photographs

### Self-Anchored Suspension Bridge Field Work

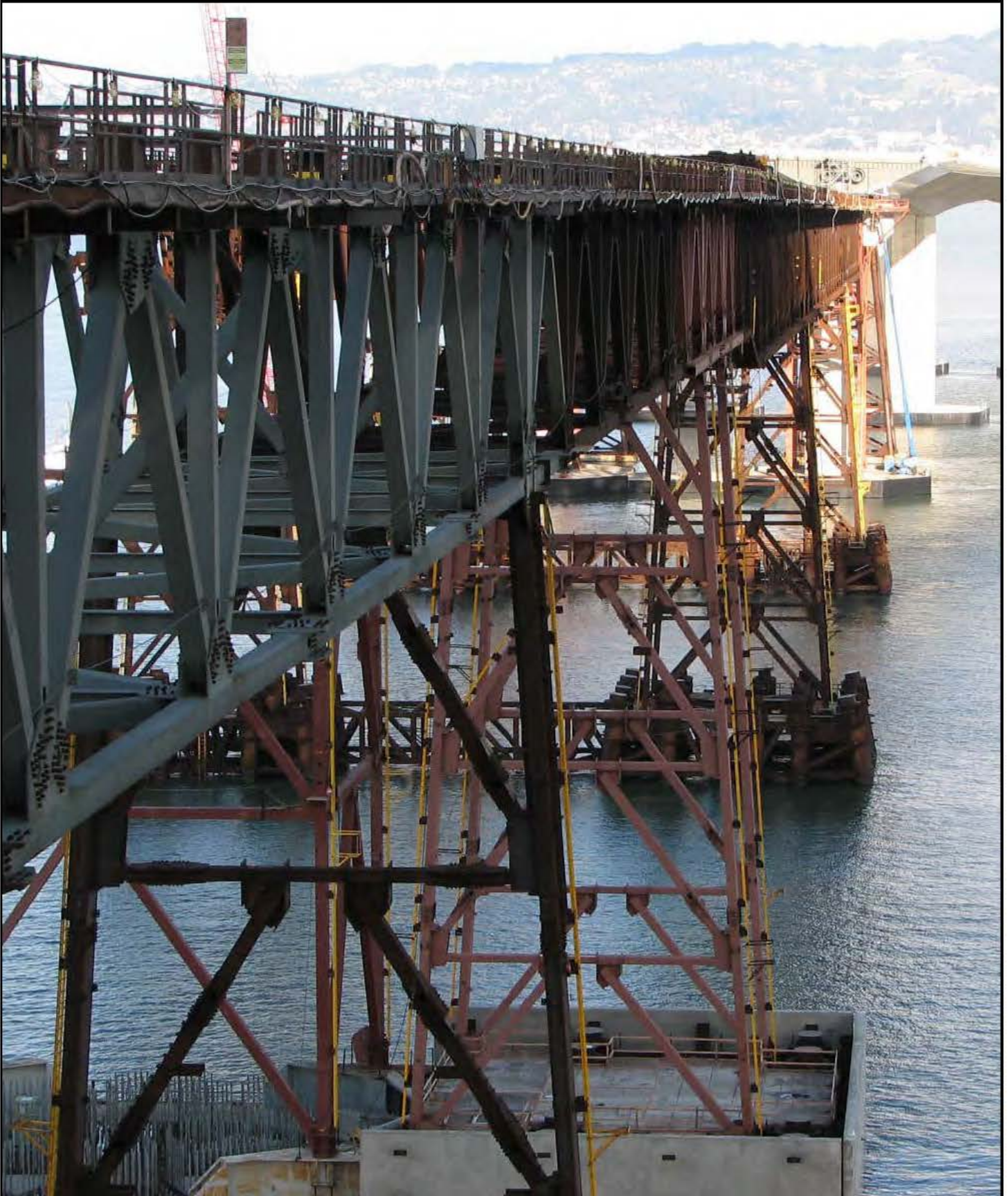


SAS - VieT1 Trestle Construction Overview



SAS Westbound Temporary Support Structures





SAS Eastbound Temporary Support Structures Looking East



## Appendix F: Project Progress Photographs

### Oakland Touchdown



Oakland Touchdown Falsework Removal



Oakland Touchdown Mole Substation Exterior





Oakland Touchdown Detour Paved



Oakland Touchdown Falsework Piles Removed

## Appendix F: Project Progress Photographs

### 92/880 Interchange



92/880 Widening at Mount Eden Overhead Crossing



92/880 Pump Station Construction in Progress





92/880 Site Preparation of New Route 92 and Interstate 880 Separator



## Appendix G: Glossary of Terms

**AB144/SB 66 BUDGET:** The planned allocation of resources for the Toll Bridge Seismic Retrofit Program, or subordinate projects or contracts, as provided in Assembly Bill 144 and Senate Bill 66, signed into law by Governor Schwarzenegger on July 18, 2005 and September 29, 2005, respectively.

**BATA BUDGET:** The planned allocation of resources for the Regional Measure 1 Program, or subordinate projects or contracts as authorized by the Bay Area Toll Authority as of June 2005.

**APPROVED CHANGES:** For cost, changes to the AB144/SB 66 Budget or BATA Budget as approved by the Bay Area Toll Authority Commission. For schedule, changes to the AB 144/SB 66 Project Complete Baseline approved by the Toll Bridge Program Oversight Committee, or changes to the BATA Project Complete Baseline approved by the Bay Area Toll Authority Commission.

**CURRENT APPROVED BUDGET:** The sum of the AB144/SB66 Budget or BATA Budget and Approved Changes.

**COST TO DATE:** The actual expenditures incurred by the program, project or contract as of the month and year shown.

**COST FORECAST:** The current forecast of all of the costs that are projected to be expended so as to complete the given scope of the program, project, or contract.

**AT COMPLETION VARIANCE or VARIANCE (cost):** The mathematical difference between the Cost Forecast and the Current Approved Budget.

**AB 144/SB 66 PROJECT COMPLETE BASELINE:** The planned completion date for the Toll Bridge Seismic Retrofit Program or subordinate projects or contracts.

**BATA PROJECT COMPLETE BASELINE:** The planned completion date for the Regional Measure 1 Program or subordinate projects or contracts.

**PROJECT COMPLETE CURRENT APPROVED SCHEDULE:** The sum of the AB144/SB66 Project Complete Baseline or BATA Project Complete Baseline and Approved Changes.

**PROJECT COMPLETE SCHEDULE FORECAST:** The current projected date for the completion of the program, project, or contract.

**SCHEDULE VARIANCE or VARIANCE (schedule):** The mathematical difference expressed in months between the Project Complete Schedule Forecast and the Project Complete Current Approved Schedule.

**% COMPLETE:** % Complete is based on an evaluation of progress on the project, expenditures to date, and schedule.



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*The information in this report is provided in accordance with California Government code Section 755. This document is one of a series of reports prepared for the Bay Area Toll Authority (BATA)/Metropolitan Transportation Commission (MTC) for the Toll Bridge Seismic Retrofit and Regional Measure 1 Programs. The contract value for the monitoring efforts, technical analysis, and field site works that contribute to these reports, as well as the report preparation and production is \$1,574,873.73.*

**URS**



**Hatch Mott  
MacDonald**

**Bay Area Management Consultants**

An Association of URS Corporation and Hatch Mott MacDonald





**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 30, 2009

**FR:** Andrew Fremier, Deputy Director, BATA

**RE:** Agenda No. - 4b  
Progress Reports  
Item- Draft TBSRP Fourth Quarter 2009 Project Progress and Financial  
Update/ Annual Progress Report 2009

---

**Recommendation:**

For Information Only / **APPROVAL**

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

For your approval, attached are Appendices A1 and B which reflect proposed revisions to the TBPOC-approved budget and the 4<sup>th</sup> Quarter 2009 forecasts for the contracts and the Program (changes are highlighted in green), for incorporation in the final version of the report. The proposed revisions establish budgets for individual contracts in the YBITS and OTD segments, and also transfer approximately \$70 million in savings from the YBITS Capital Outlay to the Program Contingency based on the recent low bid. A number of minor contract level Capital Outlay Support (COS) changes are also proposed to maintain sufficient budget coverage for actual expenditures. There is no net change to the overall Program COS budget.

Included in this package is the Draft Fourth Quarter 2009 Project Progress and Financial Update/ Annual Progress Report 2009, for information. The report neither reflects revised forecasts nor the most current actual costs and risk management data.

**Attachment(s):**

1. Appendix A1, Toll Bridge Seismic Retrofit Program, AB 144/SB 66 Baseline Budget and Forecasts for the 4thQuarter 2009

2. Appendix B, TBSRP – SFOBB East Span Only, AB 144/SB 66 Baseline Budget and Forecasts for the 4thQuarter 2009
3. Draft Toll Bridge Seismic Retrofit and Regional Measure 1 Programs Annual Progress Report 2009 (see end of binder)

<div>Toll Bridge Seismic Retrofit Program</div> <div>AB 144/SB 66 Baseline Budget and Forecasts for the 4th Quarter 2009</div>								
(Dollars in millions)								
Bridge		AB 144/SB 66 Baseline	TBPOC Approved Budget	TBPOC Approved Budget	2nd Quarter 2009 Forecast	3rd Quarter 2009 Forecast	4th Quarter 2009 Forecast	Cost variance
				Proposed	(50% RMC)	(50% RMC)	(50% RMC)	Forecast variance (4th Q09 - 3rd Q09)
Benicia-Martinez								
	Capital Outlay Support	\$38.14	\$38.14	\$38.14	\$38.1	\$38.1	\$38.1	
	Capital Outlay	\$139.69	\$139.69	\$139.69	\$139.7	\$139.7	\$139.7	
	Total	\$177.83	\$177.83	\$177.83	\$177.8	\$177.8	\$177.8	
Carquinez								
	Capital Outlay Support	\$28.67	\$28.67	\$28.67	\$28.7	\$28.7	\$28.7	
	Capital Outlay	\$85.46	\$85.46	\$85.46	\$85.5	\$85.5	\$85.5	
	Total	\$114.13	\$114.13	\$114.13	\$114.2	\$114.2	\$114.2	
San Mateo-Hayward								
	Capital Outlay Support	\$28.14	\$28.14	\$28.14	\$28.1	\$28.1	\$28.1	
	Capital Outlay	\$135.37	\$135.37	\$135.37	\$135.4	\$135.4	\$135.4	
	Total	\$163.51	\$163.51	\$163.51	\$163.5	\$163.5	\$163.5	
Vincent Thomas								
	Capital Outlay Support	\$16.42	\$16.42	\$16.42	\$16.4	\$16.4	\$16.4	
	Capital Outlay	\$42.09	\$42.09	\$42.09	\$42.1	\$42.1	\$42.1	
	Total	\$58.51	\$58.51	\$58.51	\$58.5	\$58.5	\$58.5	
San Diego-Coronado								
	Capital Outlay Support	\$33.50	\$33.50	\$33.50	\$33.5	\$33.5	\$33.5	
	Capital Outlay	\$70.02	\$70.02	\$70.02	\$70.0	\$70.0	\$70.0	
	Total	\$103.52	\$103.52	\$103.52	\$103.5	\$103.5	\$103.5	
Richmond-San Rafael								
	Capital Outlay Support	\$134.00	\$127.00	\$127.00	\$127.0	\$127.0	\$127.0	
	Capital Outlay	\$698.00	\$689.50	\$689.50	\$689.5	\$689.5	\$689.5	
	Richmond-San Rafael Project Reserves	\$82.00						
	Total	\$914.00	\$816.50	\$816.50	\$816.5	\$816.5	\$816.5	
West Span Retrofit								
	Capital Outlay Support	\$75.00	\$75.00	\$75.00	\$75.0	\$75.0	\$75.0	
	Capital Outlay	\$232.90	\$232.90	\$232.90	\$232.9	\$232.9	\$232.9	
	Total	\$307.90	\$307.90	\$307.90	\$307.9	\$307.9	\$307.9	
West Approach								
	Capital Outlay Support	\$120.00	\$120.00	\$117.00	\$117.0	\$117.0	\$117.0	\$0.0
	Capital Outlay	\$309.00	\$350.70	\$350.70	\$340.7	\$338.1	\$338.1	(\$12.6)
	Total	\$429.00	\$470.70	\$467.70	\$457.7	\$455.1	\$455.1	(\$12.6)
SFOBB East Span								
	Capital Outlay Support	\$959.30	\$959.30	\$959.30	\$1,203.1	\$1,203.1	\$1,242.5	\$283.2
	Capital Outlay	\$4,492.19	\$4,761.60	\$4,695.95	\$5,109.1	\$5,041.1	\$5,061.4	\$365.5
	Other Budgeted Capital	\$35.11	\$31.81	\$31.81	\$7.7	\$7.7	\$7.7	(\$24.1)
	Total	\$5,486.60	\$5,752.71	\$5,687.06	\$6,319.9	\$6,251.9	\$6,311.6	\$624.5
	Program Indirect	\$30.00	\$30.00	\$30.00	\$30.0	\$30.0	\$30.0	\$0.0
	Subtotal Capital Outlay Support	\$1,463.17	\$1,456.17	\$1,453.17	\$1,696.9	\$1,696.9	\$1,736.3	\$283.2
	Subtotal Capital Outlay	\$6,321.83	\$6,539.14	\$6,473.49	\$6,852.6	\$6,782.0	\$6,802.3	\$328.8
	Subtotal Toll Seismic Retrofit	\$7,785.00	\$7,995.31	\$7,926.66	\$8,549.5	\$8,478.9	\$8,538.6	\$612.0
	Net Programmatic Risks				\$49.8	\$165.4	\$98.0	\$98.0
	Program Contingency	\$900.00	\$689.69	\$758.34	\$85.7	\$40.7	\$48.3	(\$710.0)
	Total Toll Seismic Retrofit Program	\$8,685.00	\$8,685.00	\$8,685.00	\$8,685.0	\$8,685.0	\$8,685.0	

Notes:

\* Budget for Richmond-San Rafael Bridge includes \$16.9 million of deck joint rehabilitation work that considered to be eligible for seismic retrofit program funding. (Due to the rounding of numbers, the totals above are show within \$0.02).



Toll Bridge Seismic Retrofit Program - SFOBB East Span Only						
AB 144/SB 66 Baseline Budget and Forecasts for 4th Quarter 2009						
(Dollars in millions)						
East Span Contract		AB 144/SB 66 Baseline	TBPOC Current Approved Budget	TBPOC Current Approved Budget Proposed	3rd Quarter 2009 Forecast (50% RMC)	4th Quarter 2009 Forecast (50% RMC)
SFOBB East Span -Skyway						
	Capital Outlay Support	\$197.00	\$181.00	\$181.20	\$181.1	\$181.2
	Capital Outlay	\$1,293.00	\$1,254.10	\$1,254.10	\$1,254.1	\$1,254.1
	Total	\$1,490.00	\$1,435.10	\$1,435.30	\$1,435.2	\$1,435.3
SFOBB East Span -SAS- Superstructure						
	Capital Outlay Support	\$214.63	\$214.63	\$214.63	\$412.9	\$453.1
	Capital Outlay	\$1,753.72	\$1,753.72	\$1,753.72	\$2,014.1	\$2,051.1
	Total	\$1,968.35	\$1,968.35	\$1,968.35	\$2,427.0	\$2,504.2
SFOBB East Span -SAS- W2 Foundations						
	Capital Outlay Support	\$10.00	\$10.00	\$9.20	\$10.0	\$9.2
	Capital Outlay	\$26.40	\$26.40	\$26.40	\$26.4	\$26.4
	Total	\$36.40	\$36.40	\$35.60	\$36.4	\$35.6
SFOBB East Span -SAS- E2/T1 Foundations						
	Capital Outlay Support	\$52.50	\$31.00	\$28.40	\$28.6	\$28.4
	Capital Outlay	\$313.51	\$280.90	\$280.90	\$280.9	\$280.9
	Total	\$366.01	\$311.90	\$309.30	\$309.5	\$309.3
YBI/SAS (Archeology)						
	Capital Outlay Support	\$1.08	\$1.08	\$1.08	\$1.1	\$1.1
	Capital Outlay	\$1.06	\$1.06	\$1.06	\$1.1	\$1.1
	Total	\$2.14	\$2.14	\$2.14	\$2.2	\$2.2
YBI - USCG Rd Relocation						
	Capital Outlay Support	\$3.00	\$3.00	\$3.00	\$3.0	\$3.0
	Capital Outlay	\$3.00	\$3.00	\$3.00	\$3.0	\$3.0
	Total	\$6.00	\$6.00	\$6.00	\$6.0	\$6.0
YBI - Substation & Viaduct						
	Capital Outlay Support	\$6.50	\$6.50	\$6.50	\$6.5	\$6.5
	Capital Outlay	\$11.60	\$11.60	\$11.60	\$11.6	\$11.6
	Total	\$18.10	\$18.10	\$18.10	\$18.1	\$18.1
YBI Detour						
	Capital Outlay Support	\$29.50	\$66.00	\$84.50	\$85.5	\$90.7
	Capital Outlay	\$131.92	\$492.80	\$492.80	\$504.0	\$486.2
	Total	\$161.42	\$558.80	\$577.30	\$589.5	\$576.9
YBI - Transition Structures (Total, including the following split contracts and prior-to-split expenditures)						
	Capital Outlay Support	\$78.65	\$78.65	\$78.15	\$105.5	\$106.6
	Capital Outlay	\$299.36	\$276.10	\$206.30	\$285.9	\$291.3
	Total	\$378.01	\$354.75	\$284.45	\$391.4	\$397.9
YBI- Transition Structures Contract No. 1						
	Capital Outlay Support			\$45.05	\$65.1	\$65.1
	Capital Outlay			\$144.00	\$223.2	\$228.6
	Total			\$189.05	\$288.3	\$293.7
YBI- Transition Structures Contract No. 2						
	Capital Outlay Support			\$16.00	\$23.4	\$24.4
	Capital Outlay			\$59.00	\$59.4	\$59.4
	Total			\$75.00	\$82.8	\$83.8
YBI- Transition Structures Contract No. 3 - Landscape						
	Capital Outlay Support			\$1.00	\$1.0	\$1.0
	Capital Outlay			\$3.30	\$3.3	\$3.3
	Total			\$4.30	\$4.3	\$4.3
Oakland Touchdown (Total, including the following split contracts and prior-to-split expenditures)						
	Capital Outlay Support	\$74.40	\$74.40	\$85.22	\$95.3	\$95.2
	Capital Outlay	\$283.80	\$283.80	\$288.00	\$289.0	\$284.7
	Total	\$358.20	\$358.20	\$373.22	\$384.3	\$379.9
Oakland Touchdown Contract No. 1						
	Capital Outlay Support		\$49.90	\$45.52	\$50.4	\$47.3
	Capital Outlay		\$226.50	\$212.00	\$211.0	\$211.7
	Total		\$276.40	\$257.52	\$261.4	\$259.0
Oakland Touchdown Contract No. 2						
	Capital Outlay Support			\$15.80	\$20.5	\$23.5

Toll Bridge Seismic Retrofit Program - SFOBB East Span Only						
AB 144/SB 66 Baseline Budget and Forecasts for 4th Quarter 2009						
(Dollars in millions)						
East Span Contract		AB 144/SB 66 Baseline	TBPOC Current Approved Budget	TBPOC Current Approved Budget Proposed	3rd Quarter 2009 Forecast (50% RMC)	4th Quarter 2009 Forecast (50% RMC)
	Capital Outlay			\$62.00	\$64.0	\$59.0
	Total			\$77.80	\$84.5	\$82.5
Oakland Touchdown Contract - Electrical Systems						
	Capital Outlay Support			\$1.40	\$1.5	\$1.5
	Capital Outlay			\$4.40	\$4.4	\$4.4
	Total			\$5.80	\$5.9	\$5.9
Oakland Touchdown Contract - Navy Cable <sup>(1)</sup>						
	Capital Outlay Support			\$0.90	\$0.9	\$0.9
	Capital Outlay			\$9.60	\$9.6	\$9.6
	Total			\$10.50	\$10.5	\$10.5
Oakland Geofill						
	Capital Outlay Support	\$2.47	\$2.47	\$2.47	\$2.5	\$2.5
	Capital Outlay	\$8.21	\$8.21	\$8.21	\$8.2	\$8.2
	Total	\$10.68	\$10.68	\$10.68	\$10.7	\$10.7
Pile Installation Demonstration Project						
	Capital Outlay Support	\$1.79	\$1.79	\$1.79	\$1.8	\$1.8
	Capital Outlay	\$9.25	\$9.25	\$9.25	\$9.2	\$9.2
	Total	\$11.04	\$11.04	\$11.04	\$11.0	\$11.0
Existing Bridge Demolition						
	Capital Outlay Support	\$79.72	\$79.72	\$60.90	\$60.0	\$60.9
	Capital Outlay	\$239.15	\$239.15	\$239.10	\$232.1	\$232.1
	Total	\$318.87	\$318.87	\$300.00	\$292.1	\$293.0
Stormwater Treatment Measures						
	Capital Outlay Support	\$6.00	\$8.00	\$8.20	\$8.2	\$8.2
	Capital Outlay	\$15.00	\$18.30	\$18.30	\$18.3	\$18.3
	Total	\$21.00	\$26.30	\$26.50	\$26.5	\$26.5
Right-of-way and Environmental Mitigation						
	Capital Outlay Support	\$0.00	\$0.00	\$0.00	\$0.0	\$0.0
	Capital Outlay	\$72.40	\$72.40	\$72.40	\$72.4	\$72.4
	Total	\$72.40	\$72.40	\$72.40	\$72.4	\$72.4
Sunk Cost - Existing East Span Retrofit						
	Capital Outlay Support	\$39.46	\$39.46	\$39.46	\$39.5	\$39.5
	Capital Outlay	\$30.81	\$30.81	\$30.81	\$30.8	\$30.8
	Total	\$70.27	\$70.27	\$70.27	\$70.3	\$70.3
Environmental Phase (Expended)						
	Capital Outlay Support	\$97.70	\$97.70	\$97.70	\$97.7	\$97.7
Project Expenditures, Pre-splits						
	Capital Outlay Support	\$44.90	\$44.90	\$44.90	\$44.9	\$44.9
Non-project Specific Costs						
	Capital Outlay Support	\$20.00	\$19.00	\$12.00	\$19.0	\$12.0
	Subtotal East Span Capital Outlay Support	\$959.30	\$959.30	\$959.30	\$1,203.1	\$1,242.5
	Subtotal East Span Capital Outlay and Sunk Costs	\$4,492.19	\$4,761.60	\$4,695.95	\$5,041.1	\$5,061.4
	Other Budgeted Capital	\$35.11	\$31.81	\$31.81	\$7.7	\$7.7
	Total SFOBB East Span	\$5,486.60	\$5,752.71	\$5,687.05	\$6,251.9	\$6,311.6

<sup>(1)</sup> Current contract allotment to install two submarine electrical cables is \$11.5 million. Additional non-program funding to support this allocation beyond the \$9.6 million of available programs funds has been made available by the Treasure Island Development Authority.

(Due to the rounding of numbers, the totals above are shown within \$0.02).



# **TOLL BRIDGE SEISMIC RETROFIT AND REGIONAL MEASURE 1 PROGRAMS**

**ANNUAL PROGRESS REPORT 2009**



**TOLL BRIDGE PROGRAM  
OVERSIGHT COMMITTEE**

CALTRANS · BAY AREA TOLL AUTHORITY · CALIFORNIA TRANSPORTATION COMMISSION

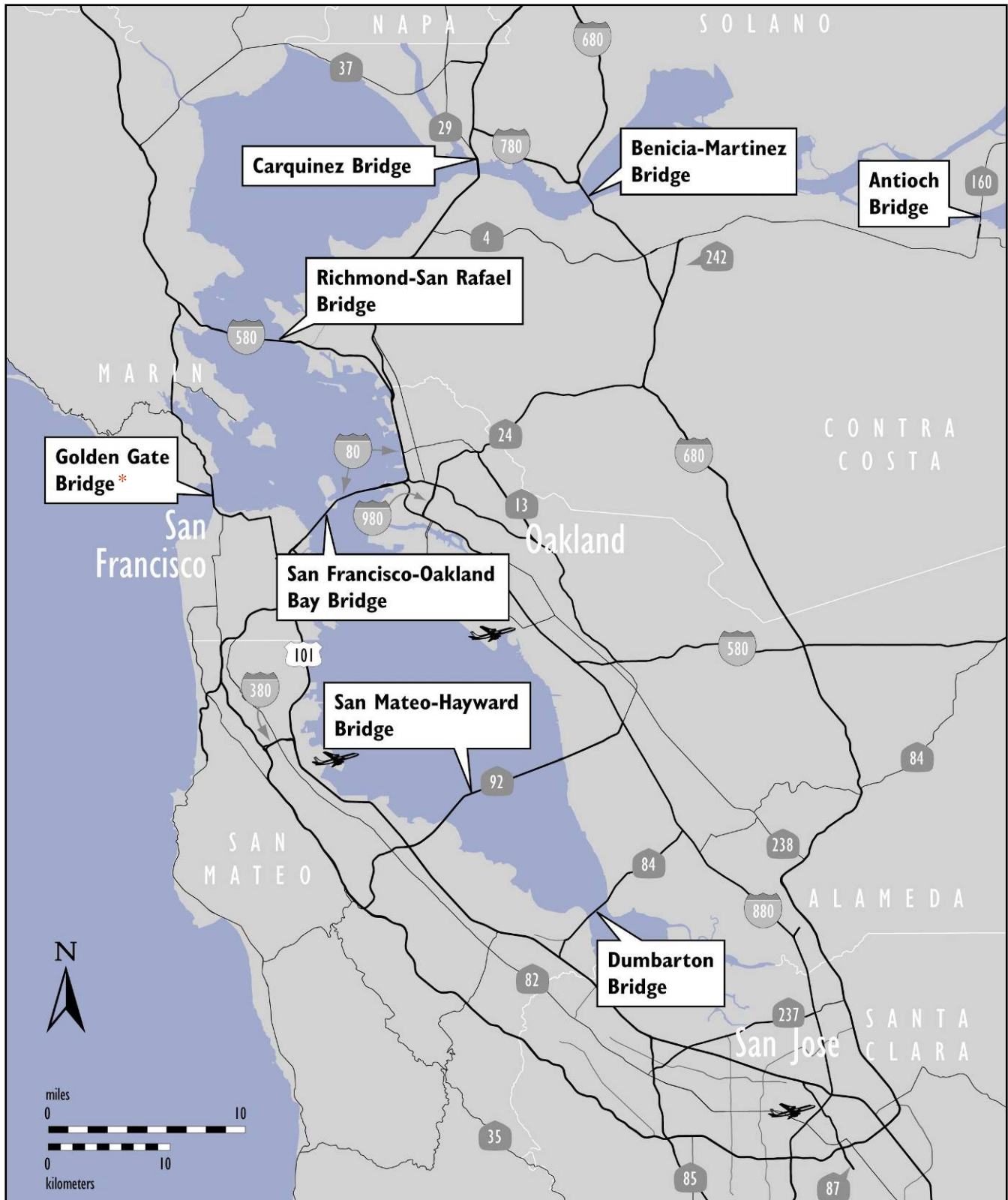




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## Map of Bay Area Toll Bridges



\* The Golden Gate Bridge is owned and operated by the Golden Gate Bridge, Highway, and Transportation District.



## Introduction

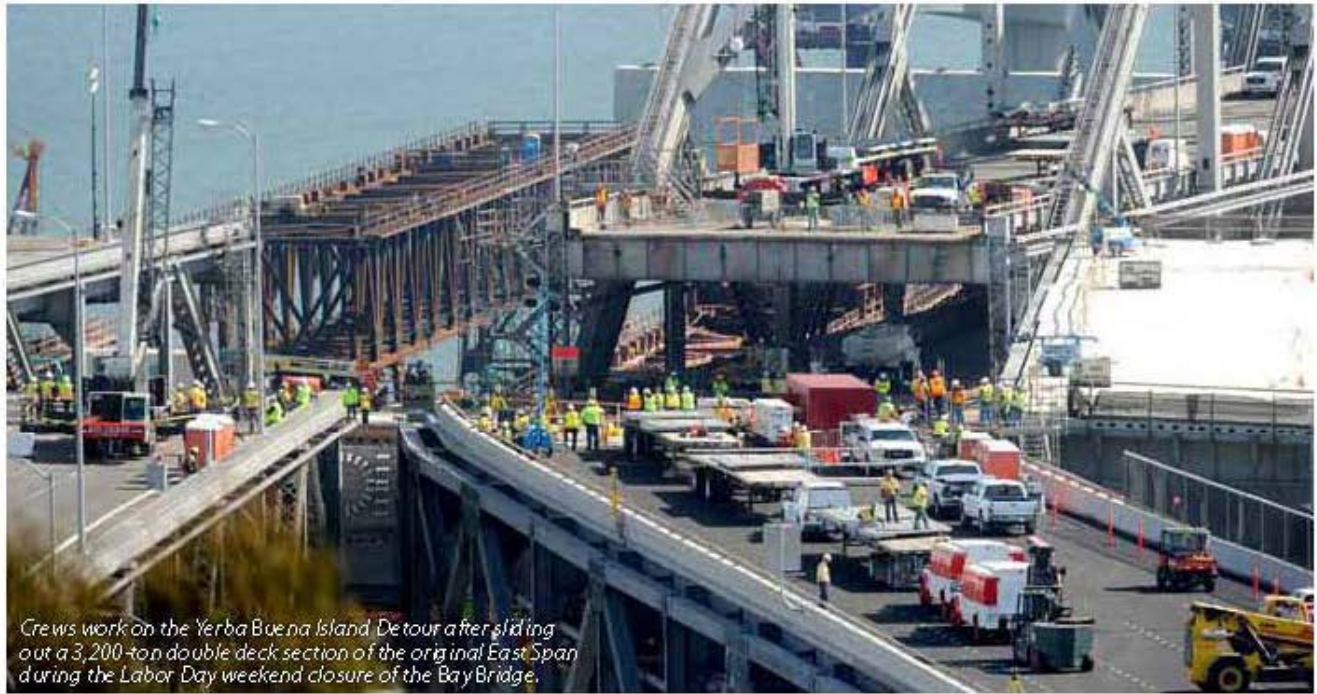
In July 2005, Assembly Bill (AB) 144 (Hancock) created the Toll Bridge Program Oversight Committee (TBPOC) to implement a project oversight and project control process for the Benicia-Martinez Bridge and State Toll Bridge Seismic Retrofit Program projects. The TBPOC consists of the Caltrans Director, the Bay Area Toll Authority (BATA) Executive Director and the Executive Director of the California Transportation Commission (CTC). The TBPOC's project oversight and control processes include, but are not limited to, reviewing bid specifications and documents, providing field staff to review ongoing costs, reviewing and approving significant change orders and claims in excess of \$1 million (as defined by the committee) and preparing project reports.

AB 144 identified the Toll Bridge Seismic Retrofit Program and the new Benicia-Martinez Bridge Project as being under the direct oversight of the TBPOC. The Toll Bridge Seismic Retrofit Program includes:

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
San Francisco-Oakland Bay Bridge East Span Replacement	Construction
San Francisco-Oakland Bay Bridge West Approach Replacement	Complete
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit	Complete
San Mateo-Hayward Bridge Seismic Retrofit	Complete
Richmond-San Rafael Bridge Seismic Retrofit	Complete
1958 Carquinez Bridge Seismic Retrofit	Complete
1962 Benicia-Martinez Bridge Seismic Retrofit	Complete
San Diego-Coronado Bridge Seismic Retrofit	Complete
Vincent Thomas Bridge Seismic Retrofit	Complete

The new Benicia-Martinez Bridge is part of a larger program of toll-funded projects called the Regional Measure 1 (RM1) Toll Bridge Program under the responsibility of BATA and Caltrans. While the rest of the projects in the RM1 program are not directly under the responsibility of the TBPOC, BATA and Caltrans will continue to report on their progress as an informational item. The RM1 program includes:

Regional Measure 1 Projects	Open to Traffic Status
Interstate 880/State Route 92 Interchange Reconstruction	Construction
1962 Benicia-Martinez Bridge Reconstruction	Open
New Benicia-Martinez Bridge	Open
Richmond-San Rafael Bridge Deck Overlay Rehabilitation	Open
Richmond-San Rafael Bridge Trestle, Fender & Deck Joint Rehabilitation	Open
Westbound Carquinez Bridge Replacement	Open
San Mateo-Hayward Bridge Widening	Open
State Route 84 Bayfront Expressway Widening	Open
Richmond Parkway	Open



*Crews work on the Yerba Buena Island Detour after sliding out a 3,200-ton double deck section of the original East Span during the Labor Day weekend closure of the Bay Bridge.*

## 2009 YEAR IN REVIEW

In 2009, monumental took on a new meaning. The connection of the Yerba Buena Island (YBI) Detour represented the most significant realignment of the San Francisco-Oakland Bay Bridge since it opened in 1936. The arrival of the massive shear leg crane barge signaled another giant step forward in building the new East Span's most iconic element, the Self-Anchored Suspension Span. The completion of the West Approach marked the seismic retrofit of the entire western half of the Bay Bridge.

The past year has also served sobering reminders that not everything goes according to plan. During the Labor Day weekend bridge closure, engineers found a crack in an eyebar that, while unrelated to the closure, would have closed the bridge on its own. Many drivers ignored the lower speed limits on the YBI Detour. Fabrication and shop-drawing delays continue to affect the SAS.

Yet despite these obstacles, we are focused on delivering a world-class bridge, and 2009 brought us one step closer to that reality.

### 2009 HIGHLIGHTS SAN FRANCISCO-OAKLAND BAY BRIDGE

#### WEST APPROACH

- The Harrison Street off-ramp, after being closed for more than three years, reopened.
- All work on the West Approach was completed, and the contract was accepted in April.
- With the completion of the West Approach, the entire western half of the Bay Bridge has been seismically retrofitted.

#### YERBA BUENA ISLAND (YBI) DETOUR

- Crews finished building the YBI Detour, and connected it to the East Span during a four-day closure of the Bay Bridge on Labor Day weekend. The detour is the most significant realignment of the original bridge since it opened in 1936.
- Millions of drivers have safely traversed the detour, which requires them to slow down to 40 mph. However, the altered alignment has led to a spike in traffic accidents on the detour, including one fatality. Caltrans accelerated safety enhancements, including additional 35 MPH signs, reflective striping on barrier rails and radar signs. The California Highway Patrol enforced speed limits, issuing hundreds of tickets for violations including speeding and drunken driving.





#### ORIGINAL EAST SPAN/EYEBAR

- During the bridge closure, engineers conducting a regularly scheduled inspection found a cracked eyebar on the East Span. While the damage was unrelated to the weekend's construction, it was serious enough to have required a bridge closure on its own. Crews made emergency repairs to the bridge that weekend, and made further enhancements to the repair during an emergency closure of the bridge in late October. Work to implement a long-term repair began in December; this effort did not require a full-bridge closure, but instead used select overnight lane closures.

#### YERBA BUENA ISLAND TRANSITION STRUCTURE (YBITS)

- Of the YBITS's 13 supports (footings and columns), five have been substantially completed and seven more are in progress.
- With traffic now flowing on the YBI Detour, crews are demolishing the original approach to the YBI tunnel to make way for the YBITS. Demolition will be completed by spring 2010, freeing up room to complete work on the supports.
- In December, Caltrans opened bids for the YBITS #1 Contract; it is expected to be awarded by February 2010. The contract will focus on the superstructure, including the roadways.

#### SELF-ANCHORED SUSPENSION SPAN (SAS)

- Nearly 16,000 tons of temporary steel was erected, or more than 85% of the total temporary steel; when all of the temporary steel is in place, it will weigh 18,410 tons.
- Of the permanent steel, 68 percent of the tower sections and 55 percent of the roadway sections are out of the workshops in China; in 2008 only 17 percent of tower sections and 6 percent of deck sections were done. However, problems with welds have delayed the initial shipments. The first deck sections did not leave China until December 31, more than a year after their original shipment date.
- The massive shear leg crane barge, called the Left Coast Lifter, that is unloading and erecting temporary and permanent steel for the SAS arrived in March. The barge is 400-feet by 100-feet. The crane's boom weighs 992 tons, and is 328 feet long. The crane can lift up to 1,873 tons.

#### OAKLAND TOUCHDOWN (OTD)

- All major work on the first phase of the OTD, including the entire westbound roadway and 500 feet of the eastbound roadway, is finished.
- The SAS contractor is using the westbound lanes of the OTD to access the Skyway to work on the eastern end of the SAS.



### TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION



## RISK MANAGEMENT

- Risk Management conducted a schedule analysis of the YBI Detour connection performed during Labor Day weekend. The analysis helped the construction team justify the need for a four-day bridge closure, which helped the project team plan a more realistic schedule.
- The completion of the West Approach in 2009 was a risk management milestone, as the program accurately forecasted risks to the budget and what would be needed to finish the project on time.
- The program began assessing risks with the fabrication of the SAS's single cable. This included obtaining samples of the wires used in the cable for tests to ascertain potential risks with fabrication and placement.
- Risk management began evaluating mechanical, electrical and plumbing systems throughout the entire Bay Bridge to determine risks to the integration of those systems.
- The program presented at the AASHTO Value Engineering (VE) Conference in San Diego and the Project Management Institute's Annual Symposium in Santa Clara.

## ENVIRONMENTAL PROTECTION

- The Bay Bridge bioretention pilot project was completed, which will collect and treat storm water runoff from 143 acres of Caltrans right-of-way at the Bay Bridge approach.
- Teams monitored for marine mammals and fish during pile driving and other deep-water construction associated with the SAS temporary support steel.
- To mitigate potential impacts to eelgrass beds and sandflats, the environmental group is committed to funding a \$1 million Baywide Eelgrass Inventory and Resource Management Research Program and to spending \$2.5 million toward creating 10.8 acres of eelgrass beds and five acres of sandflats. The research work is nearly complete, and it included a comprehensive baywide eelgrass survey in 2009.

## GATEWAY PARK

- A second visioning conference was held in February to review progress made on extending the geographic scope of Gateway Park, drafting a timeline of projects within Gateway Park, researching national and international case studies, and developing a scope of work for a Master Plan.
- A Request for Proposals was sent in April to recruit a consultant to drive the Master Plan development process, including hosting public workshops. International firm Perkins + Will was selected to begin the 18-month process of creating a plan, including coordinating public workshops.



*A worker in China welds one of the steel tower sections for the Self-Anchored Suspension Span.*





## OUTREACH/COMMUNICATIONS

- The Bay Bridge Public Information Office launched an extremely successful public awareness campaign about the Labor Day weekend closure of the Bay Bridge. Traffic was cleared from the bridge in just 21 minutes, use of public transit soared, and the amount of traffic throughout the region decreased.
- The award-winning project Web site BayBridge360—which allows visitors to zoom in and out of key sections of the bridge via an innovative graphic interface to watch videos, slide shows and animated simulations—won its biggest award yet in 2009—the Webby Award for Best Government Web Site, beating out competition including NASA.
- The PIO launched a Bay Bridge Twitter feed, providing another channel to reach stakeholders directly. By the end of the year, the feed had nearly 4,000 followers.
- The PIO also created Media Bar, where high-resolution pool footage gathered from construction sites is provided to the media through the project's Web site.
- The project's Documentation Team, consisting of videographers, photographers and writers, traversed the globe and the country—from Japan, China, South Korea and England to Arizona, Oregon, Washington and Pennsylvania—to chronicle and capture the story of how the new Bay Bridge is being built.

## EDUCATIONAL OUTREACH PROGRAM

- The Lawrence Hall of Science contract between the University of California at Berkeley and Caltrans has been signed, and the partnership will begin in January 2010.
- The program is collaborating with The Exploratorium in San Francisco on potential exhibits and collateral. Program representatives attended a collaborative workshop hosted by The Exploratorium designed to help the interactive children's science museum develop concepts for its new facility. Other participants included the National Oceanic and Atmospheric Administration, the Golden Gate National Recreation Area, the Science Museum of Minnesota and the Arizona Museum of Natural History.
- In-class presentations to middle and high school students exceeded the program's goal of 15 such presentations for the year, and demand continues to grow.



## TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION



## SMALL BUSINESS PROGRAM

- In 2009, there were 97 small businesses providing critical services and materials to the Seismic Safety Projects. Participation commitments amount to more than \$136 million.
- The program launched its 2009 series of technical assistance courses designed to provide small businesses with an in-depth review of essential tools and methodology needed to successfully complete Caltrans projects. More than 88 people attended the courses on Subcontractor Essentials and Cost Estimating, Bidding and Cost Control.
- The program also hosted and participated in several outreach events, including a Yerba Buena Island Transition Structure Contract #1 event.

## OTHER BRIDGES

### BENICIA-MARTINEZ BRIDGE

- All work reconfiguring the original 1962 Benicia-Martinez Bridge to carry four lanes of southbound traffic, along with a new bicycle/pedestrian path, was completed by November, one month early.

- Crews also fixed the roadway undulation on southbound Interstate 680 just south of the Benicia-Martinez Bridge. Work to raise Marina Vista Road, which often closes due to flooding during winter rains was finished. The road leads into downtown Martinez.

### DUMBARTON BRIDGE/ANTIOCH BRIDGE

- Gov. Arnold Schwarzenegger signed Assembly Bill 1175, which will add the Dumbarton and Antioch bridges to the Toll Bridge Seismic Retrofit Program in 2010.
- The total estimated cost of the retrofits to these two bridges has been revised from \$950 million to \$750 million, as project plans have been refined with reduced scope, which has minimized cost risks. BATA has already funded design plans for both bridge projects in anticipation of them being advertised in early 2010.
- A cost risk analysis was developed as a new technique for quantifying potential bid ranges on these new seismic retrofit projects and incorporated into the risk management model. The results are being added to the funding legislation.



*The new northbound and retrofitted southbound decks of the Benicia-Martinez Bridge.*

## 2009 YEAR IN REVIEW







## SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS



Oakland Touchdown Falsework Removed



Oakland Touchdown Eastbound Hinge Pipe beam Inserted between OTD and Skyway



Dumbarton/Antioch Bridges Mock-Up of Dumbarton Pier Columns Undergoing Seismic Testing

### Oakland Touchdown Contract

In early August, the Oakland Touchdown (OTD) contractor, MCM, continues to be ahead of schedule and has opened construction access on the new westbound OTD structure to the Skyway. Work continues on the eastbound structure.

### TBSRP Capital Outlay Support

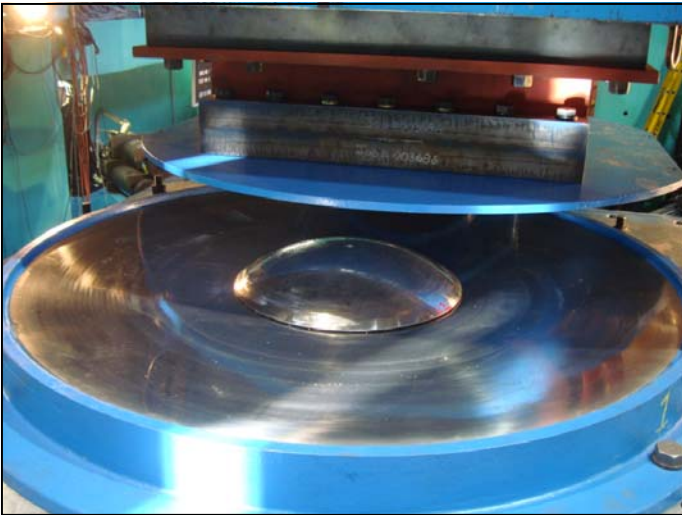
Based on initial discussions with our contractors, early completion of the East Span Project was believed to be possible and sufficient to mitigate potential identified support cost increases. The support cost increases are due primarily to the need to re-advertise the SAS contract and to decisions made to increase our opportunities for early completion of the East Span Project and potential for support cost savings. These decisions include a 12-month schedule extension provided during bid time to attract the maximum number of bidders for the SAS contract and extension of the YBI Detour contract to advance future foundation and column work of the transition structure and west-end deck reconstruction. Since we now judge early completion and the intended cost savings to be unlikely, we forecast a potential drawdown of \$244 million from the program contingency for project support. Further increases in project support costs would be expected if the project is delayed beyond the 2013 forecast bridge opening date.

### TBSRP Programmatic Risks

This category includes risks that are not yet scoped within existing contracts and/or that spread across multiple contracts. The interdependencies between all of the contracts in the program result in the potential for delays on one contract to impact the other contracts.

### Seismic Retrofit of the Dumbarton and Antioch Bridges

When first conceived, the Toll Bridge Seismic Retrofit Program only identified seven of the nine state-owned toll bridges to be in need of seismic retrofit, which excluded the Dumbarton and Antioch Bridges. Further seismic vulnerability studies were completed by Caltrans and BATA on those structures and determined that both structures were in need of retrofit based on current seismic standards. On November 11, 2009, Governor Schwarzenegger approved Assembly Bill 1175 which added the Dumbarton and Antioch Bridges to the Toll Bridge Seismic Retrofit Program. BATA has now initiated efforts to raise tolls on the



Prototype of Bearing for the Antioch Bridge Seismic Retrofit Project



New Pedestrian Bicycle Path on Benicia-Martinez Bridge Under Construction



Site Preparation for New Route 92 and Interstate 880 Separator

seven State-owned toll bridges in the Bay Area to, in part, fund the seismic retrofit of the Dumbarton and Antioch Bridges.

BATA has already funded design plans for both bridge projects in anticipation of the projects being advertised in early 2010. The total estimated cost of these retrofits have been recently revised from \$950 million to \$750 million as project plans have been refined with reduced scope which have minimized cost risks.

## Regional Measure 1 Toll Bridge Program (RM1)

### New Benicia-Martinez Bridge Project

On August 29, 2009, Caltrans, BATA and a number of dignitaries celebrated the substantial completion of the rehabilitation of the 1962 Benicia-Martinez Bridge. As the last major contract of the New Benicia-Martinez Bridge Project, the rehabilitation project converted the existing bridge to carry southbound-only Interstate 680 traffic. The work included adding a new southbound traffic lane (opened in early August 2009), shoulders and a new bicycle/pedestrian pathway. The project is now complete.

### Interstate 880/State Route 92 Interchange Reconstruction Project

On this interchange reconstruction contract, the new east Route 92 to North Interstate 880 direct connector structure (ENCONN) was completed and opened to detour traffic on May 16, 2009. Work is ongoing on a new separator structure. The Department and BATA have revised the support forecast for the project. An increase in support is due to extended advertisement for the project and weather delays. The project is still forecast to be completed as planned in June 2011.



## Toll Bridge Seismic Retrofit Program Cost Summary

	Contract Status	AB 144/SB 66 Budget (Jul 2005)	TBPOC Approved Changes	Current TBPOC Approved Budget (November 2009)	Cost to Date (October 2009)	Current Cost Forecast (November 2009)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
<b>SFOBB East Span Seismic Replacement</b>								
Capital Outlay Construction								
Skyway	Completed	1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-	●
SAS Marine Foundations	Completed	313.5	(32.6)	280.9	275.0	280.9	-	●
SAS Superstructure	Construction	1,753.7	-	1,753.7	836.0	2,014.1	260.4	●
YBI Detour	Construction	132.0	360.8	492.8	399.3	504.0	11.2	●
YBI Transition Structures (YBITS)		299.3	(23.2)	276.1	-	285.9	9.8	●
YBITS 1	Bids Open	-	-	-	-	223.2	-	●
YBITS 2	Design	-	-	-	-	59.4	-	●
YBITS Landscaping	Design	-	-	-	-	3.3	-	●
Oakland Touchdown		283.8	-	283.8	196.9	289.0	5.2	●
OTD 1	Construction	-	-	-	189.1	211.0	-	●
OTD 2	Design	-	-	-	-	64.0	-	●
OTD Electrical Systems	Design	-	-	-	-	4.4	-	●
Submerged Electric Cable	Completed	-	-	-	7.9	9.6	-	●
Existing Bridge Demolition	Design	239.2	-	239.2	-	232.1	(7.1)	●
Stormwater Treatment Measures	Completed	15.0	3.3	18.3	16.7	18.3	-	●
Other Completed Contracts	Completed	90.3	-	90.3	89.2	90.3	-	●
Capital Outlay Support		959.3	-	959.3	781.9	1,203.1	243.8	●
Right-of-Way and Environmental Mitigation		72.4	-	72.4	51.2	72.4	-	●
Other Budgeted Capital		35.1	(3.3)	31.8	0.7	7.7	(24.1)	●
<b>Total SFOBB East Span Replacement</b>		<b>5486.6</b>	<b>266.1</b>	<b>5,752.7</b>	<b>3,883.8</b>	<b>6,251.9</b>	<b>499.2</b>	
<b>SFOBB West Approach Replacement</b>								
Capital Outlay Construction	Completed	309.0	41.7	350.7	328.1	338.1	(12.6)	●
Capital Outlay Support		120.0	-	120.0	116.7	117.0	(3.0)	●
<b>Total SFOBB West Approach Replacement</b>		<b>429.0</b>	<b>41.7</b>	<b>470.7</b>	<b>444.8</b>	<b>455.1</b>	<b>(15.6)</b>	
<b>Completed Program Projects</b>	<b>Completed</b>	<b>1,839.4</b>	<b>(97.5)</b>	<b>1,741.9</b>	<b>1,712.6</b>	<b>1,741.9</b>	<b>-</b>	<b>●</b>
<b>Miscellaneous Program Costs</b>		<b>30.0</b>	<b>-</b>	<b>30.0</b>	<b>24.7</b>	<b>30.0</b>	<b>-</b>	<b>●</b>
<b>Net Programmatic Risks</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>165.4</b>	<b>165.4</b>	<b>●</b>
<b>Program Contingency</b>		<b>900.0</b>	<b>(210.3)</b>	<b>689.7</b>	<b>-</b>	<b>40.7</b>	<b>(649.0)</b>	<b>●</b>
<b>Total Toll Bridge Seismic Retrofit Program</b>		<b>8,685.0</b>	<b>-</b>	<b>8,685.0</b>	<b>6,065.9</b>	<b>8,685.0</b>	<b>-</b>	<b>●</b>



Within approved schedule and budget



Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated



Known project impacts with forthcoming changes to approved schedules and budgets

## Toll Bridge Seismic Retrofit Program Schedule Summary

	AB144/SB 66 Project Completion Schedule Baseline (Jul 2005)	TBPOC Approved Changes (Months)	Current TBPOC Approved Completion Schedule (November 2009)	Current Completion Forecast (November 2009)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i = g + h	j	k = j - i	l	
<b>SFOBB East Span Seismic Replacement</b>							
Contract Completion							
Skyway	Apr 2007	8	Dec 2007	Dec 2007	-	●	See Page 32
SAS Marine Foundations	Jun 2008	(5)	Jan 2008	Jan 2008	-	●	See Page 22
SAS Superstructure	Mar 2012	12	Mar 2013	Mar 2013	-	●	See Page 23
YBI Detour	Jul 2007	41	Dec 2010	Dec 2010	-	●	See Page 16
YBI Transition Structures (YBITS)	Nov 2013	12	Nov 2014	Nov 2014	-		See Page 20
YBITS 1			Sep 2013	Sep 2013	-	●	
YBITS 2			Nov 2014	Nov 2014	-	●	
YBITS Landscaping			TBD	TBD	-	●	
Oakland Touchdown	Nov 2013	12	Nov 2014	Nov 2014	-		See Page 33
OTD 1			May 2010	May 2010	-	●	
OTD 2			Nov 2014	Nov 2014	-	●	
OTD Electrical Systems			TBD	TBD	-	●	
Submerged Electric Cable			Jan 2008	Jan 2008	-	●	
Existing Bridge Demolition	Sep 2014	12	Sep 2015	Sep 2015	-	●	
Stormwater Treatment Measures	Mar 2008	-	Mar 2008	Mar 2008	-	●	
<b>SFOBB East Span Bridge Opening and Other Milestones</b>							
OTD West bound Access			Jan 2010	Jan 2010	-	●	
YBI Detour Open			Sep 2009	Sep 2009	-	●	See Page 18
Westbound Open	Sep 2011	12	Sep 2012	Dec 2012	3	●	
Eastbound Open	Sep 2012	12	Sep 2013	Sep 2013	-	●	
<b>SFOBB West Approach Replacement</b>							
Contract Completion	Aug 2009	(7)	Jan 2009	Jan 2009	-	●	

**Notes:** 1) Figures may not sum up to totals due to rounding effects.  
 2) TBSRP Forecasts for the Monthly Reports are generally updated on a quarterly basis in conjunction with quarterly risk analysis assessments for the TBSRP Projects.

## Regional Measure 1 Program Cost Summary

	Contract Status	BATA Baseline Budget (Jul 2005)	BATA Approved Changes	Current BATA Approved Budget (November 2009)	Cost to Date (November 2009)	Current Cost Forecast (November 2009)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
<b>New Benicia-Martinez Bridge</b>								
Capital Outlay Construction	Construction	861.6	174.0	1,035.6	997.7	1,035.6	-	●
Capital Outlay Support		157.1	35.1	192.2	191.2	192.2	-	●
Capital Outlay Right-of-Way		20.4	(0.1)	20.3	17.0	20.3	-	●
Project Reserve		20.8	3.6	24.4	-	24.4	-	
<b>Total New Benicia-Martinez Bridge</b>		<b>1,059.9</b>	<b>212.6</b>	<b>1,272.5</b>	<b>1,205.9</b>	<b>1,272.5</b>	<b>-</b>	
<b>Interstate 880/Route 92 Interchange Reconstruction</b>								
Capital Outlay Construction	Construction	94.8	60.2	155.0	80.8	155.0	-	●
Capital Outlay Support		28.8	34.6	63.4	50.7	63.4	-	●
Capital Outlay Right-of-Way		9.9	7.0	16.9	11.9	16.9	-	●
Project Reserve		0.3	9.4	9.7	-	9.7	-	
<b>Total I-880/SR-92 Interchange Reconstruction</b>		<b>133.8</b>	<b>111.2</b>	<b>245.0</b>	<b>143.4</b>	<b>245.0</b>	<b>-</b>	
<b>Completed Program Projects</b>		<b>918.9</b>	<b>(30.0)</b>	<b>888.9</b>	<b>878.6</b>	<b>888.9</b>	<b>-</b>	
<b>Total Regional Measure 1 Toll Bridge Program</b>		<b>2,112.6</b>	<b>293.9</b>	<b>2,406.4</b>	<b>2,227.9</b>	<b>2,406.4</b>	<b>-</b>	

- Within approved schedule and budget
- Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated
- Known project impacts with forthcoming changes to approved schedules and budgets



## Regional Measure 1 Program Schedule Summary

	BATA Baseline Completion Schedule (Jul 2005)	BATA Approved Changes (Months)	Current BATA Approved Completion Schedule (November 2009)	Current Completion Forecast (November 2009)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i = g + h	j	k = j - i	l	
<b>New Benicia-Martinez Bridge</b>							
Contract Completion							
1962 BM Bridge Reconstruction	Dec 2009	(4)	Aug 2009	Aug 2009	-	●	See Page 48
<b>New Benicia-Martinez Bridge Opening Date</b>							
New Bridge	Dec 2007	(4)	Aug 2007	Aug 2007	-	●	
<b>Interstate 880/Route 92 Interchange Reconstruction</b>							
Contract Completion							
Interchange Reconstruction	Dec 2010	6	Jun 2011	Jun 2011	-	●	See Page 50

Notes: 1) Figures may not sum to totals due to rounding effects.



Existing Bridge YB4 Span Demolition in Progress

Yerba Buena Island Torch Cutting Existing Viaduct Span YB3





**TOLL BRIDGE SEISMIC RETROFIT PROGRAM**



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge Seismic Retrofit Strategy

When a 250-ton section of the upper deck of the East Span collapsed during the 7.1-magnitude Loma Prieta Earthquake in 1989, it was a wake-up call for the entire Bay Area. While the East Span quickly reopened within a month, critical questions lingered: How could the Bay Bridge—a vital regional lifeline structure—be strengthened to withstand the next major earthquake? Seismic experts from around the world determined that to make each separate element seismically safe on a bridge of this size, the work must be divided into numerous projects. Each project presents unique challenges. Yet there is one common challenge — the need to accommodate the more than 280,000 vehicles that cross the bridge each day.



Overview of the Completed West Approach Replacement Structure

### West Approach Seismic Replacement Project

**Project Status: Completed 2009**

Seismic safety retrofit work on the West Approach in San Francisco—bounded on the west by 5th Street and on the east by the anchorage of the west span at Beale Street—involved completely removing and replacing this one-mile stretch of Interstate 80, as well as six on- and off-ramps within the confines of the West Approach's original footprint. This project was completed on April 8, 2009.

### West Span Seismic Retrofit Project

**Project Status: Completed 2004**

The West Span lies between Yerba Buena Island and San Francisco and is made up of two complete suspension spans connected at a center anchorage. Retrofit work included adding massive amounts of steel and concrete to strengthen the entire West Span, along with new seismic shock absorbers and bracing.



West Span of the Bay Bridge



## East Span Seismic Replacement Project

Rather than a seismic retrofit, the two-mile-long East Span is being completely rebuilt. When completed, the new East Span will consist of several different sections, but will appear as a single streamlined span. The eastbound and westbound lanes of the East Span will no longer include upper and lower decks. The lanes will instead be parallel, providing motorists with expansive views of the bay. These views also will be enjoyed by bicyclists and pedestrians, thanks to a new path on the south side of the bridge that will extend all the way to Yerba Buena Island. The new span will be aligned north of the existing bridge to allow traffic to continue to flow on the existing bridge as crews build the new span.

The new span will feature the world's longest Self-Anchored Suspension (SAS) bridge that will be connected to an elegant roadway supported by piers (Skyway), which will gradually slope down toward the Oakland shoreline (Oakland Touchdown). A new transition structure on Yerba Buena Island (YBI) will connect the SAS to the YBI Tunnel and will transition the east span's side-by-side traffic to the upper and lower decks of the tunnel and west span.

When construction of the new east span is complete and vehicles have been safely rerouted to it, the original east span will be demolished.



Architectural Rendering of the New Self-Anchored Suspension Bridge on the East Span of the Bay Bridge







Yerba Buena Island Transition Structures Looking West



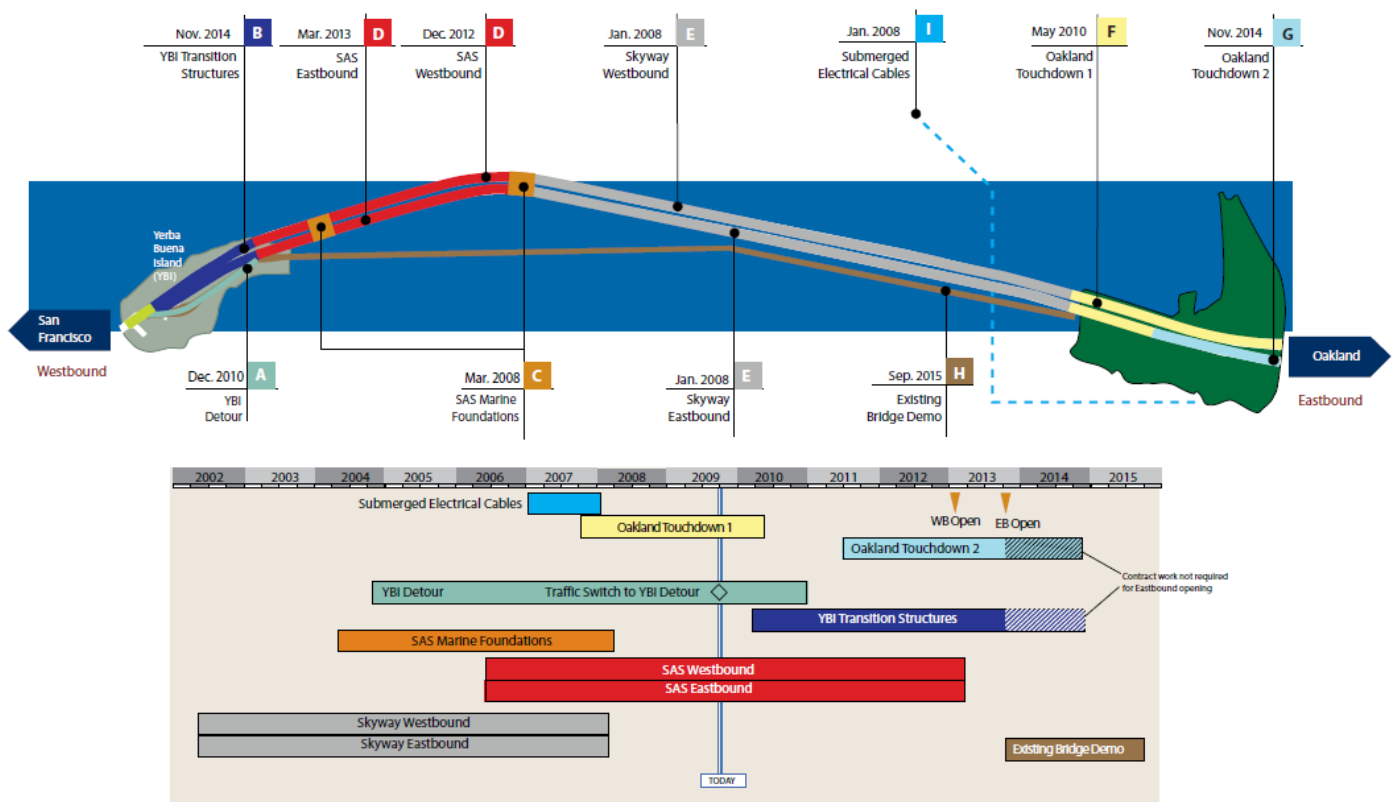
## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Summary

The new East Span bridge can be split into four major components—the Skyway and the Self-Anchored Suspension bridge in the middle and the Yerba Buena Island Transition Structures and Oakland Touchdown approaches at either end. Each component is being constructed by one to three separate contracts that all have been sequenced together.

Highlighted below are the major East Span contracts, including their schedules. The letter designation before each contract corresponds to contract descriptions in the rest of the report.

#### SFOBB East Span Work Sequence



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Detour (YBID)

As with all of the Bay Bridge's seismic retrofit projects, crews must build the Yerba Buena Island Transition Structures (YBITS) without disrupting traffic. To accomplish this daunting task, YBID eastbound and westbound traffic was shifted off the existing roadway and onto a temporary detour on Labor Day weekend 2009. Drivers will use this detour, just south of the original roadway, until traffic is moved onto the new East Span.

#### **A** YBID Contract

Contractor: C.C. Myers Inc.

Approved Capital Outlay Budget: \$492.8 M

Status: 82% Complete as of November 2009

This contract was originally awarded in early 2004 to construct the detour structure for the planned 2006 opening of the new East Span. Due to the re-advertisement of the SAS superstructure contract in 2005 because of a lack of funding at the time, the bridge opening was rescheduled to 2013. To better integrate the contract into the current East Span schedule and to improve seismic safety and mitigate future construction risks, the TBPOC has approved a number of changes to the contract, including adding the deck replacement work near the tunnel that was rolled into place over Labor Day weekend 2007, advancing future transition structure foundation work and making design enhancements to the temporary detour structure.

These changes have increased the budget and forecast for the contract to cover the revised project scope and potential project risks.



Successful Labor Day Weekend 2007 Roll-In Structure to the Tunnel

#### ***Tunnel Approach Roadway Replacement***

The first in a series of activities to open the detour viaduct was completed in 2007 with the replacement of a 350-foot-long stretch of upper-deck roadway just east of the Yerba Buena Island Tunnel. During this historic milestone, the entire Bay Bridge was closed over the 2007 Labor Day weekend so crews could demolish and replace the old section of the deck with a seismically upgraded 6,500-ton precast section of viaduct that was literally pushed into place (see photo above).

**Status:** Completed.



### Detour Viaduct Fabrication and Construction

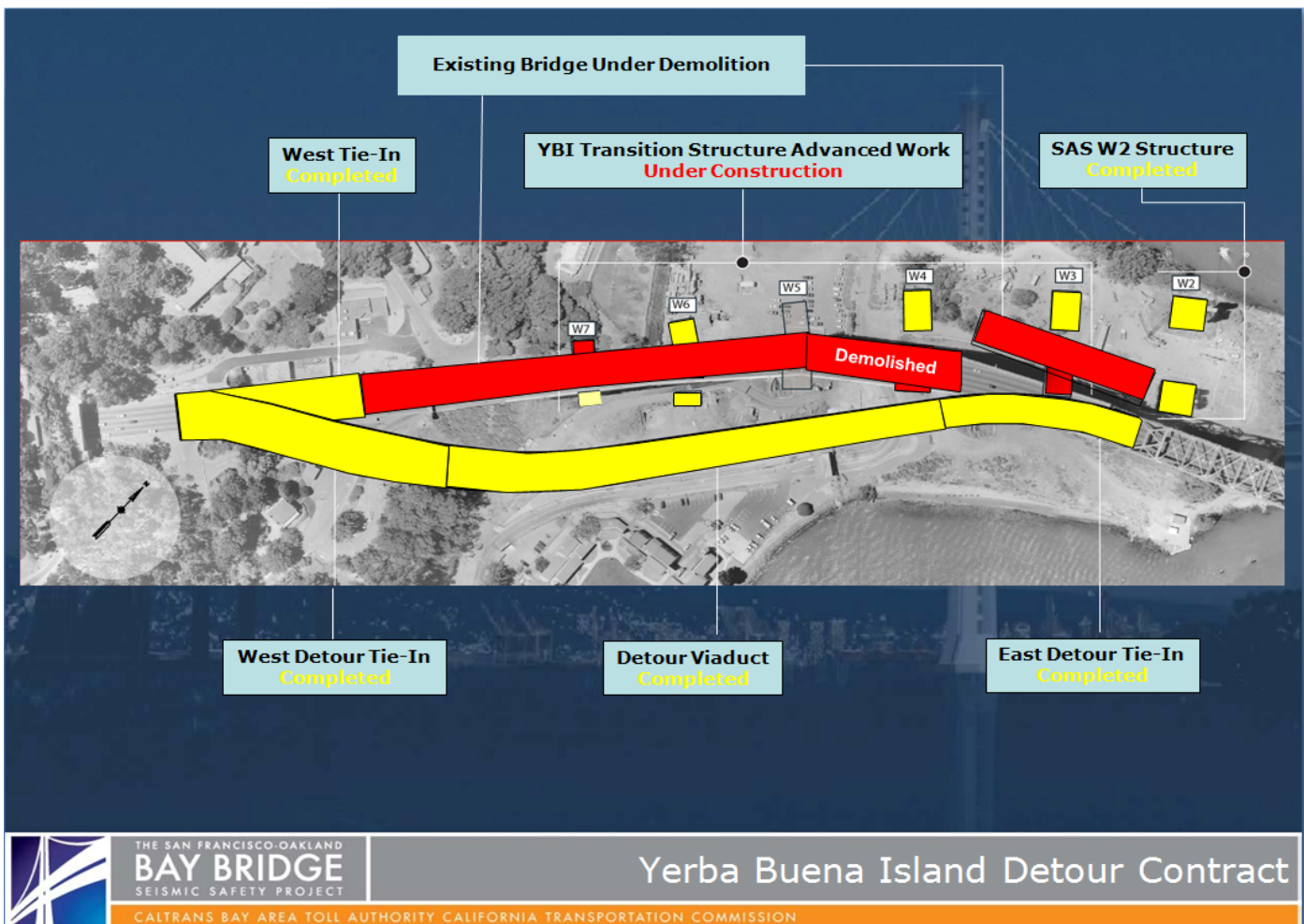
The detour viaduct runs parallel to the existing lanes on the island and ties back into the existing bridge and tunnel. Speed limits have been reduced due to the turns needed to get on and off the detour. The viaduct looks quite similar to the existing bridge, with steel cross beams and girders and a concrete roadway deck. To ensure a good fit, the steel viaduct truss members were pre-fitted during fabrication in South Korea and Oregon.

**Status:** Completed.

### Demolition of Existing Viaduct

After shifting traffic onto the detour structure, crews will focus on the demolition of the existing bridge structure into the tunnel. The old transition structure will need to be removed before construction of the new transition structures from the SAS bridge to the YBI Tunnel can be completed.

**Status:** Started in early September 2009 and is forecast to be completed in May 2010.



Overview of Yerba Buena Island Detour Contract Scope of Work and Current Status





## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Yerba Buena Island Detour (YBID) Existing Bridge Demolition*

Shifting traffic to the Yerba Buena Island Detour was the most significant realignment of the bridge to date. To accomplish this, crews cut away a 288-foot portion of the existing truss bridge and replaced it with a connection to the detour. This dramatic maneuver involved aerial construction that occurred more than 100 feet above the ground. Vehicles will travel on the detour until the completion of the new East Span.

This “S” curve detour now allows for the Yerba Buena Island demolition of the existing structure to proceed. This is a critical step in the overall East Span bridge construction.

**Status:** Demolition of the existing structure is underway.



Yerba Buena Island Detour Existing Viaduct Span YB4 Demolition Overview



Completed Yerba Buena Island Detour East Tie-In Roll-Out/Roll-In Structure



## San Francisco-Oakland Bay Bridge East Span Replacement Demolition Progress



Yerba Buena Island Detour Span YB3 Demolished and Removed



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Transition Structures (YBITS)

The new Yerba Buena Island Transition Structures (YBITS) will connect the new SAS bridge span to the existing Yerba Buena Island Tunnel, transitioning the new side-by-side roadway decks to the upper and lower decks of the tunnel. The new structures will be cast-in-place reinforced concrete structures that will look very similar to the already constructed Skyway structures. While some YBITS foundations and columns have been advanced by the YBID contract, the remaining work will be completed under three separate YBITS contracts.

#### **B** YBITS #1 Contract

Contractor: TBD

Current Capital Outlay Forecast: \$223.2 M

Status: Bids Open December 15, 2009



Yerba Buena Island Transition Structures Column W3L and Span

The YBITS #1 contract will construct the mainline roadway structures from the SAS bridge to the YBI tunnel. Work on the structures is scheduled to start once the existing structures have been demolished and removed from the site. The bid was opened on December 15, 2009 with the contractor MCM having the lowest bid contract.



Rendering of Future Yerba Buena Island Transition Structures (top) with Detour Viaduct (bottom)



## YBITS #2 Contract

Contractor: TBD

Current Capital Outlay Forecast: \$59.4 M

Status: **In Design**

The YBITS #2 contract will demolish the detour viaduct after all traffic is shifted to the new bridge and will construct a new eastbound on-ramp to the bridge in its place. The new ramp will also provide the final link for bicycle/pedestrian access off the SAS bridge onto Yerba Buena Island.

## YBITS Landscaping Contract

Contractor: TBD

Current Capital Outlay Forecast: \$3.3 M

Status: **In Design**

Upon completion of the YBITS work, a follow-on landscaping contract will be executed to re-plant and landscape the area.

### ***Yerba Buena Island Transition Structures Advanced Work***

Due to the re-advertisement of the SAS superstructure contract in 2005, it became necessary to temporarily suspend the detour contract and make design changes to the viaduct. To make more effective use of the extended contract duration and to reduce overall project schedule and construction risks, the TBPOC approved the advancement of foundation and column work from the Yerba Buena Island Transition Structures contract.



Overview of YBITS Advanced Column Work in Progress

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Self-Anchored Suspension (SAS) Bridge

If one single element bestows the status of world class on the new Bay Bridge East Span, it is the Self-Anchored Suspension (SAS) bridge. This engineering marvel will be the world's largest SAS span at 2,047 feet in length, as well as the first bridge of its kind built with a single tower.

The SAS was separated into three separate contracts—construction of the land-based foundations and columns at Pier W2; construction of the marine-based foundations and columns at Piers T1 and E2; and construction of the SAS steel superstructure, including the tower, roadway, and cabling. Construction of the foundations at Pier W2 and at Piers T1 and E2 was completed in 2004 and 2007, respectively.

#### SAS Land Foundation Contract

Contractor: West Bay Builders, Inc.

Approved Capital Outlay Budget: \$26.4 M

Status: Completed October 2004

The twin W2 columns on Yerba Buena Island provide essential support for the western end of the SAS bridge, where the single main cable for the suspension span will extend down from the tower and wrap around and under the western end of the roadway deck. Each of these huge columns required massive amounts of concrete and steel and are anchored 80 feet into the island's solid bedrock.



SAS West Elevation of W2



SAS T1 Trestle Construction Overview

#### C SAS Marine Foundations Contract

Contractor: Kiewit/FCI/Manson, Joint Venture

Approved Capital Outlay Budget: \$280.9 M

Status: Completed January 2008

Construction of the piers at E2 and T1 required significant on-water resources to drive the foundation support piles down, not only to bedrock, but also through the bay water and mud (see rendering on facing page).

The T1 foundation piles extend 196 feet below the waterline and are anchored into bedrock with heavily reinforced concrete rock sockets that are drilled into the rock. Driven nearly 340 feet deep, the steel and concrete E2 foundation piles were driven 100 feet deeper than the deepest timber piles of the existing east span in order to get through the bay mud and reach solid bedrock.





## D SAS Superstructure Contract

Contractor: American Bridge/Fluor Enterprises, Joint Venture

Approved Capital Outlay Budget: \$1,753.7 M

Status: 46% Complete as of November 2009

Rising 525 feet above mean sea level and embedded in rock, the single-tower SAS span is designed to withstand a massive earthquake. The SAS bridge is not just another suspension bridge. Traditional main cable suspension bridges have twin cables with smaller suspender cables connected to them. These cables hold up the roadbed and are anchored to the east end of the box girders. While there will appear to be two main cables on the SAS, there will actually only be one. This single cable will be anchored within the eastern end of the roadway, carried over the tower and then wrapped around the two side-by-side decks at the western end.

The single steel tower will be made up of four separate legs and the tower head connected by shear link beams, which function much like a fuse in an electrical circuit. These beams will absorb most of the impact from an earthquake, preventing damage to the tower legs.

The next several pages highlight the construction sequence of the SAS and are followed by detailed updates on specific construction activities.



Architectural Rendering of New Self-Anchored Suspension Span



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Construction Sequence*

#### STEP 1 - CONSTRUCT TEMPORARY SUPPORT STRUCTURES

Temporary support structures will need to be erected from the Skyway to Yerba Buena Island to support the new SAS bridge during construction.

**Status:** Foundations for the temporary supports are complete. Support structures are now being installed from west to east.



#### STEP 2 - INSTALL ROADWAYS

The roadway boxes will be lifted into place by using the shear-leg crane barge. The boxes will be bolted and welded together atop the temporary support trusses to form two continuous parallel steel roadway boxes.

**Status:** The Roadway Box segments are being fabricated (see page 26 for more information). **OBG lifts 1 through 4 Eastbound and Westbound shipments are forecast for the end of December 2009.**



#### STEP 3 - INSTALL TOWER

Each of the four legs of the tower will be erected in five separate lifts. The first lift will use the shear-leg crane barge while the remaining higher lifts will use a temporary support tower and lifting jacks.

**Status:** The first shipment of tower sections is being **fabricated and is forecast for shipment in mid - 2010.** (see page 26 for more information).



#### STEP 4 - MAIN CABLE AND SUSPENDER INSTALLATION

The main cable will be pulled from the east end of the SAS bridge, over the tower, and wrapped around the west end before returning back. Suspender cables will be added to lift the roadway decks off the temporary support structure.

**Status:** Cable installation is pending the erection of the tower and roadway spans.  
**Shipment for the first half of the cables is forecast for January 2010.**



#### STEP 5 - WESTBOUND OPENING

The new bridge will first open in the westbound direction pending completion of the Yerba Buena Island Transition Structures. Westbound access to the Skyway from Oakland will be completed by the Oakland Touchdown #1 contract in 2009.

**Status:** Westbound opening is scheduled for 2012.



#### STEP 6 - EASTBOUND OPENING

Opening of the bridge in the eastbound direction is pending completion of Oakland Touchdown #2, which needs westbound traffic off the existing bridge before the eastbound approach structure can be completed.

**Status:** Eastbound opening is scheduled for 2013.





## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Superstructure Fabrication Activities*

Nearly every component of the SAS above the waterline—from the temporary support structures to the roadway and tower box sections to the main cable and suspender ropes—will be fabricated off-site and erected into place upon arrival in the Bay Area. This project is truly global in nature, with fabrication of the bridge components occurring not only in the United States but around the world—in China, the United Kingdom, Japan, South Korea and other locations.

#### **Roadway and Tower Segments**

Like giant three-dimensional jigsaw puzzles, the roadway and tower segments of the SAS bridge are hollow steel shells that are internally strengthened and stiffened by a highly engineered network of welded steel ribs and diaphragms. The use of steel in this manner allows for a flexible yet relatively light and strong structure able to withstand the massive loads placed on the bridge during seismic events.

**Status:** The contractor has reported that fabrication of the steel tower and roadway boxes has fallen 15 months behind schedule due to the complexity of the design and fabrication.

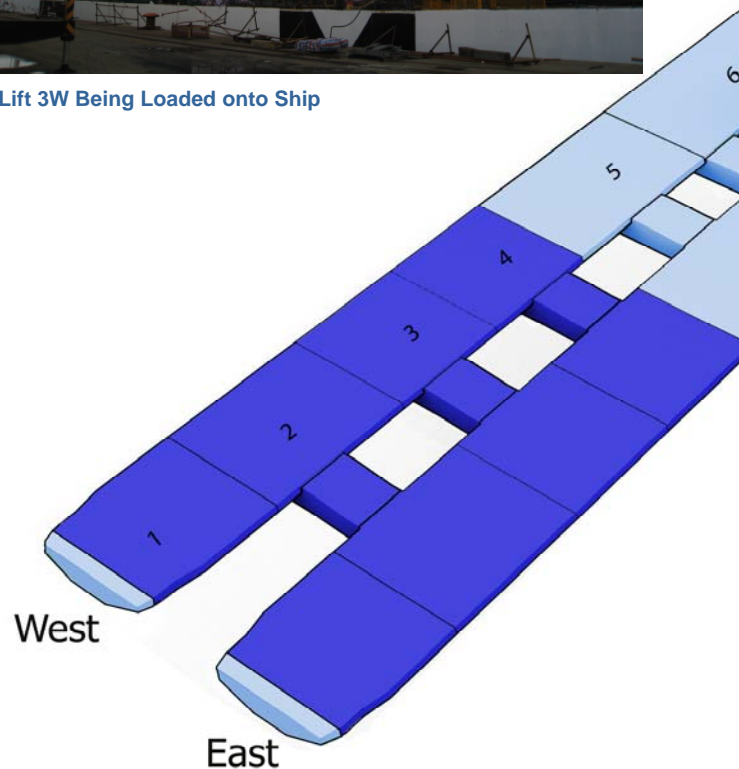
As shown in the diagram to the right, roadway segments 1 to 11 are in segment assembly or further along in the process, while segment 12 is in subassembly fabrication. Tower segments 1 to 4 are in various stages of fabrication. The first shipment of roadway boxes (segments 1 through 4) are anticipated by the end of the year, while the first tower segments are expected next year.

All components have undergone a rigorous quality review by ZPMC, ABF, and Caltrans to ensure that only bridge components that have been built in accordance to the specifications will be shipped.

On the critical path to completing the bridge are the fabrication of the last two roadway sections (segments 13 and 14). Start of fabrication of these segments has fallen behind schedule due to delays in the fabrication drawing preparation process. The TBPOC continues to execute and explore options to improve review times and



SAS Lift 3W Being Loaded onto Ship



communication, including locating additional design staff with shop drawing drafters in Vancouver, Canada.

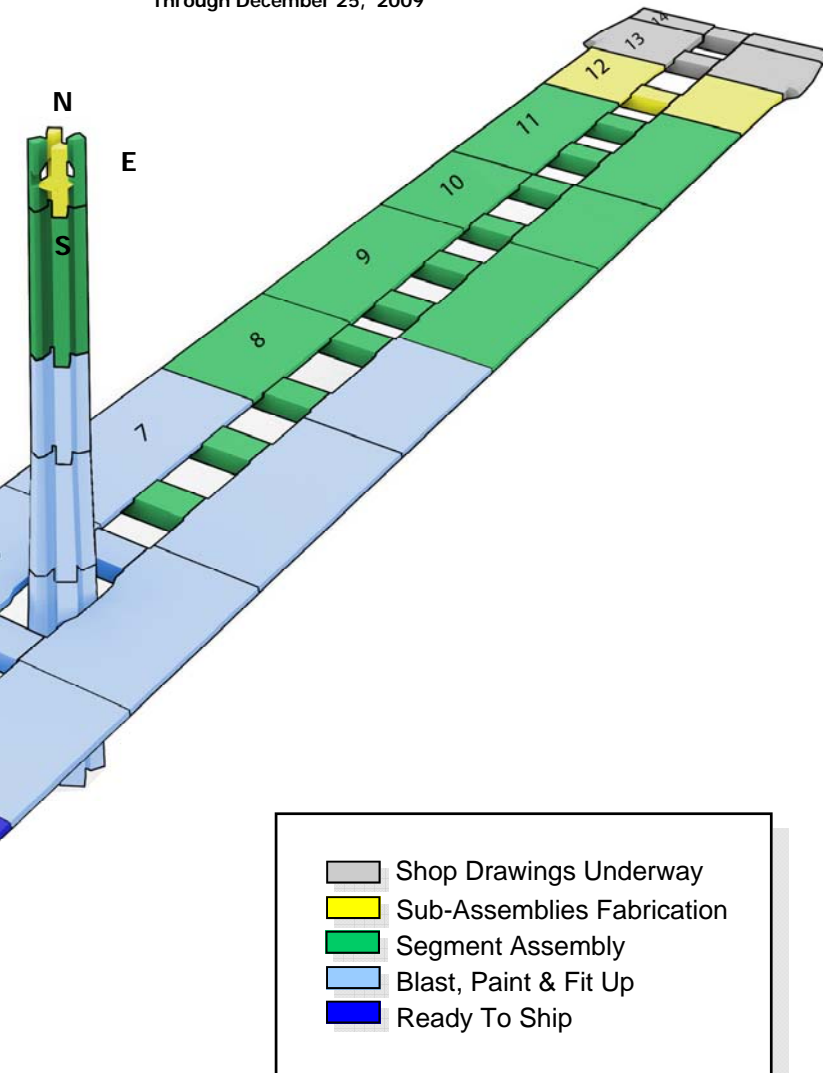
These delays will likely prevent the westbound opening of the bridge in 2012, but we continue to estimate for full opening of the bridge in 2013 (see additional progress photos on pages 68 through 69).





## Fabrication Progress Diagram

Through December 25, 2009



SAS Tower Shaft Lift 1 West Placed onto Base Place on Heavy Dock alongside Lift 1 South and East



SAS Tower Shaft Rotating Lift 4 West in Shop 11



SAS Tower Shaft Lifts 1 West Moved to Heavy Dock for Vertical Tipping

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### ***Self-Anchored Suspension (SAS) Superstructure Fabrication Activities (cont.)***

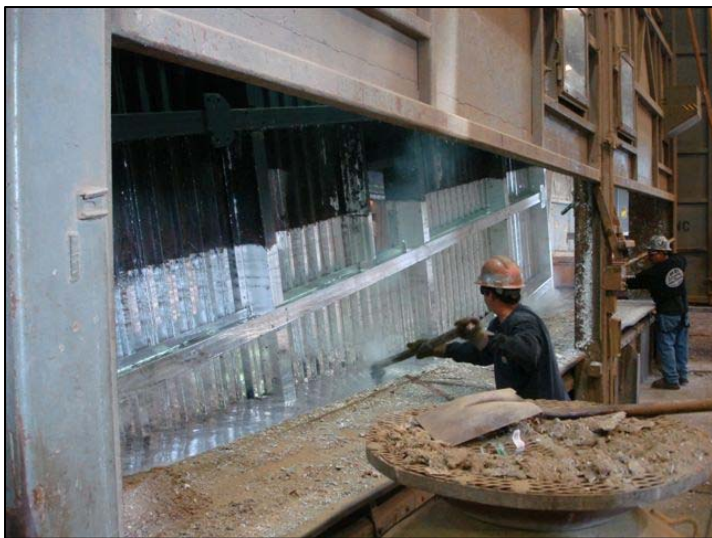
#### ***Cables and Suspenders***

One continuous main cable will be used to support the roadway deck of the SAS bridge. Anchored into the eastern end of the bridge, the main cable will start on the east end of the box girder, go over the main tower at T1, loop around the western end of the roadway decks at Pier W2, and then go back over the main tower to the eastern end of the box girder. The main cable will be made up of bundles of individual wire strands. Supporting the roadway decks to the main cable will be a number of smaller suspender cables. The main cable will be fabricated in China and the suspender cables in Missouri, USA.

**Status:** Initial trial testing of the main cable strands was performed in September 2009. **The first half of the cable shipment is anticipated in January of 2010.**



SAS Cable Band Machining



SAS Service Platform Upper-Frame Galvanizing, California

#### ***Saddles, Bearings, Hinges, and Other Bridge Components***

The mounts on which the main cable and suspender ropes will sit are made from solid steel castings. Castings for the main cable saddles are being made by Japan Steel Works, while the cable bands and brackets are being made by Goodwin Steel in the United Kingdom.

The bridge bearings and hinges that support, connect, and transfer loads from the self-anchored suspension (SAS) span to the adjoining sections of the new east span are being fabricated in a number of locations. Work on the bearings is being performed in Pennsylvania, USA and South Korea, while hinge pipe beams are being fabricated in Oregon, USA.

**Status:** The cable saddles and hinges at the W2 cap beam and YBITS are under fabrication. The hinges in between the Skyway and Oakland Touchdown have been installed.



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Superstructure Field Activities*



Shear-Leg Barge Crane Lifting a Section of SAS Temporary Support Structure

#### **Shear-Leg Barge Crane**

The massive shear-leg barge crane that is helping to build the SAS superstructure arrived in the San Francisco Bay on March 12, 2009 after a trans-Pacific voyage.

The crane and barge are separate units operating as a single entity dubbed the “Left Coast Lifter.” The 400-by-100-foot barge is a U.S. flagged vessel that was custom built in Portland, Oregon by U.S. Barge, LLC and outfitted with the crane by Shanghai Zhenhua Heavy Industry Co. Ltd. (ZPMC) at a facility near Shanghai, China. The crane’s boom weighs 992 tons and is 328 feet long. The crane can lift up to 1,873 tons, including the deck and tower sections for the SAS.

The crane has off-loaded all temporary structures shipped to date and has lifted 85 percent of the temporary structures into place. Work on the eastbound side of the SAS must occur first, as the crane cannot reach over permanent westbound decks to work on the eastbound roadway.

**Status:** The shear-leg crane arrived at the jobsite March 2009



SAS View from East of E2

#### **Cap Beams**

Construction of the massive steel-reinforced concrete cap beams that link the columns at piers W2 and E2 was left to the SAS superstructure contractor and represents the only concrete portions of work on that contract. The east and west ends of the SAS roadway will rest on the cap beams and the main cable will wrap around Pier W2, while anchoring into the east end of the SAS deck sections near E2.

**Status:** Completed March 2009



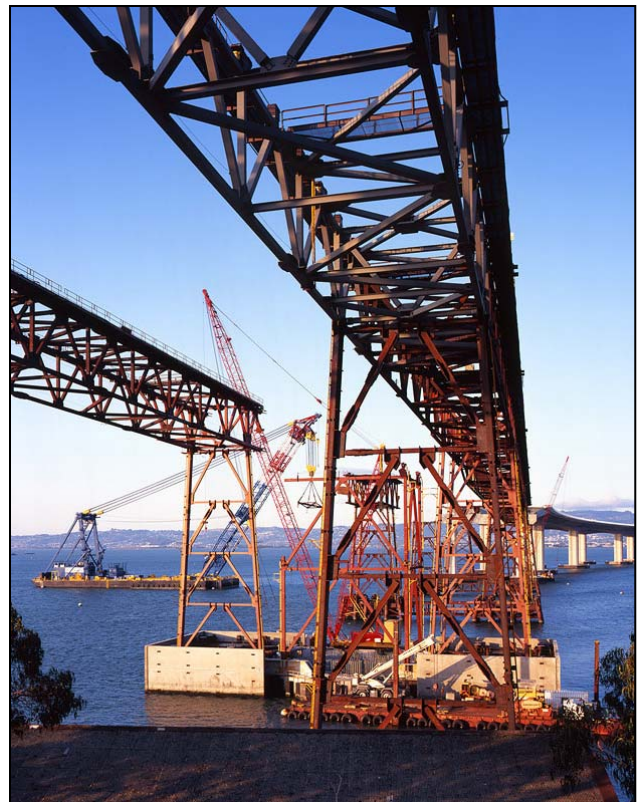
## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### ***Self-Anchored Suspension (SAS) Superstructure Field Activities***

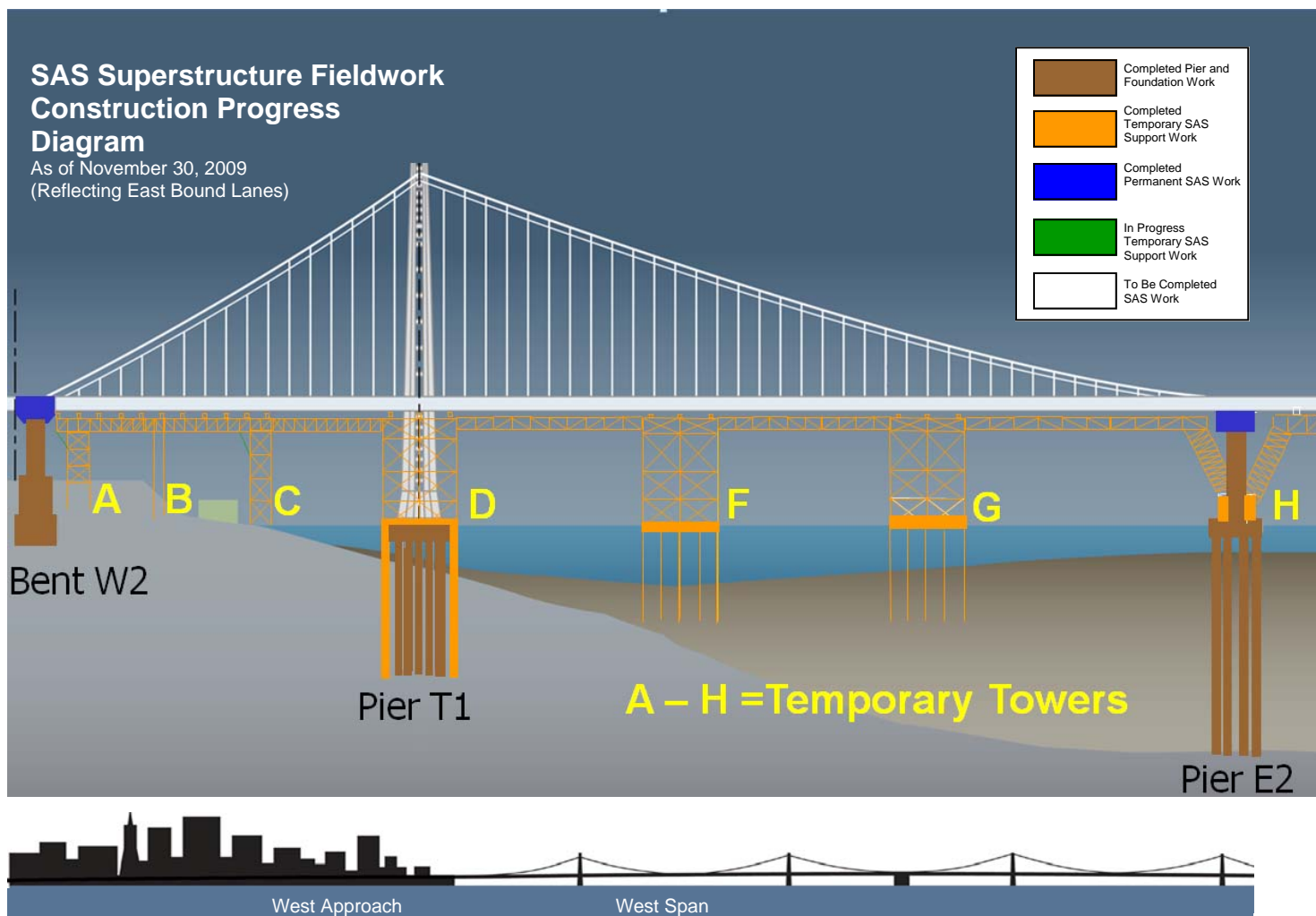
#### ***Temporary Support Structures***

To erect the roadway decks and tower of the bridge, temporary support structures will first be put in place. Almost a bridge in itself, the temporary support structures will stretch from the end of the completed Skyway back to Yerba Buena Island. For the tower, a strand jack system is being built into the tower's temporary frame to elevate the upper sections of the tower into place. These temporary supports are being fabricated in the Bay Area, as well as in Oregon and in China at ZPMC.

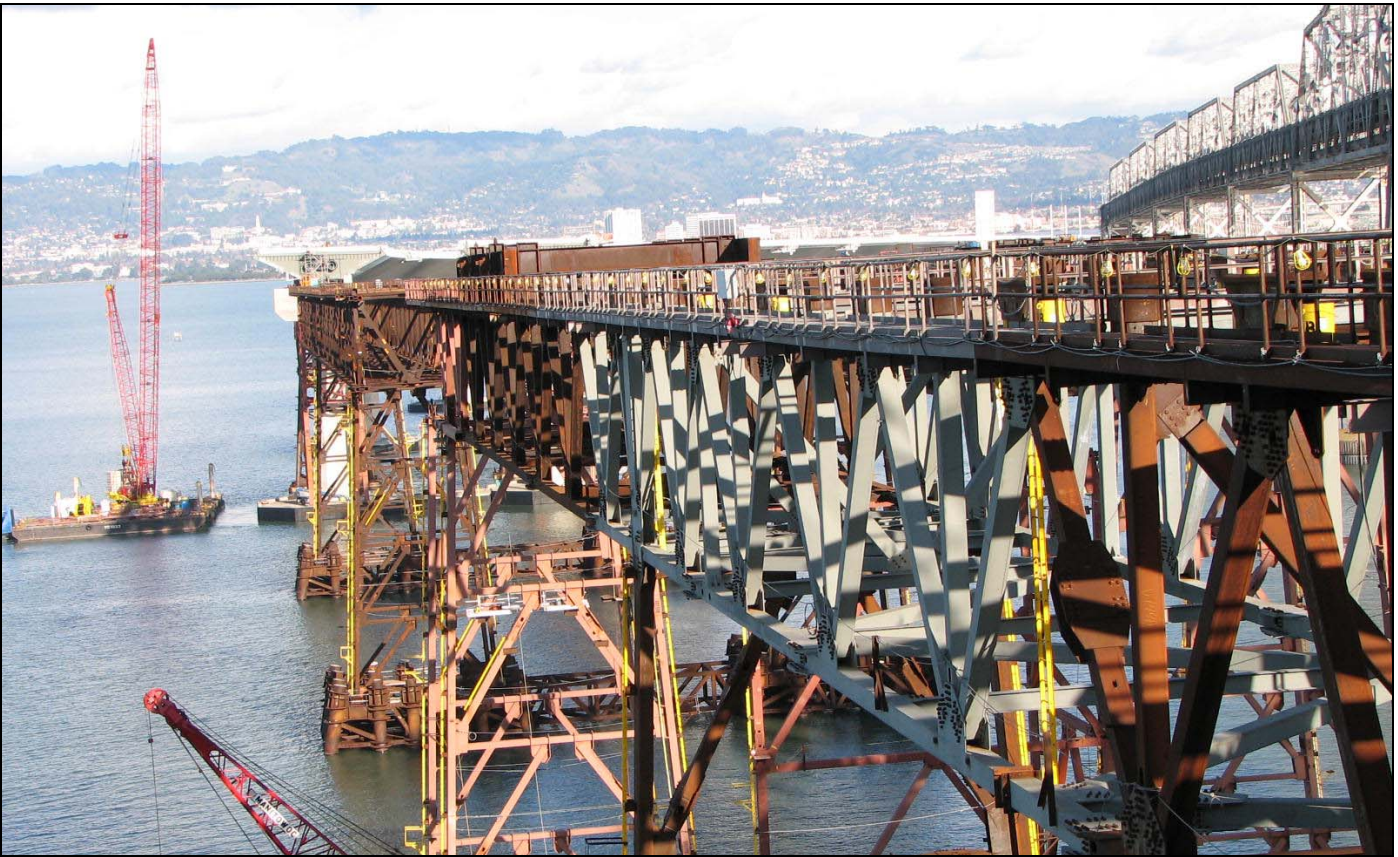
**Status:** The temporary support foundations and six temporary towers have been completed and 85 percent of the temporary structures are in place.



SAS Eastbound and Westbound Temporary Support Structures







SAS Westbound Temporary Support Structure



SAS Temporary Support Structures and Tower Erection Temporary Framing and the End of the completed Skyway on the Left



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Skyway

The Skyway, which comprises much of the new East Span, will drastically change the appearance of the Bay Bridge. Replacing the gray steel that currently cages drivers, a graceful, elevated roadway supported by piers will provide sweeping views of the bay.

#### **E Skyway Contract**

**Contractor:** Kiewit/FCI/Manson, Joint Venture

**Approved Capital Outlay Budget:** \$1,254.1 M

**Status:** Completed March 2008

Extending for more than a mile across Oakland mudflats, the Skyway is the longest section of the East Span. It sits between the new Self-Anchored Suspension (SAS) span and the Oakland Touchdown. In addition to incorporating the latest seismic-safety technology, the side-by-side roadway decks of the Skyway feature shoulders and lane widths built to modern standards.

The Skyway's decks are composed of 452 pre-cast concrete segments (standing three stories high), and contain approximately 200 million pounds of structural steel, 120 million pounds of reinforcing steel, 200 thousand linear feet of piling and about 450 thousand cubic yards of concrete. These are the largest segments of their kind ever cast and were lifted into place by winches that were custom-made for this project.

The Skyway marine foundation consists of 160 hollow steel pipe piles measuring eight feet in diameter and dispersed among 14 sets of piers. The 365-ton piles were driven more than 300 feet into the deep bay mud. The new East Span piles were battered or driven in at an angle, rather than vertically, to obtain maximum strength and resistance.

Designed specifically to move during a major earthquake, the Skyway features several state-of-the-art seismic safety innovations, including 60-foot-long hinge pipe beams. These beams will allow deck segments on the Skyway to move, enabling the deck to withstand greater motion and to absorb more earthquake energy.



Completed Skyway Left of Existing East Span



Western End of Completed Skyway





## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Oakland Touchdown

When completed, the Oakland Touchdown (OTD) structures will connect Interstate 80 in Oakland to the new side-by-side decks of the new East Span. For westbound drivers, the OTD will be their introduction to the graceful new East Span. For eastbound drivers from San Francisco, this section of the bridge will carry them from the Skyway to the East Bay, offering unobstructed views of the Oakland hills.

The OTD will be constructed through two contracts. The first contract will build the new westbound lanes, as well as part of the eastbound lanes. The second contract to complete the eastbound lanes cannot fully begin until westbound traffic is shifted onto the new bridge so that a portion of the upper deck of the existing bridge can be demolished to allow for a smooth transition for the new eastbound lanes in Oakland.

#### **F** Oakland Touchdown #1 Contract

Contractor: MCM Construction, Inc.

Current Capital Outlay Forecast: \$211.0 M

Status: 85% Complete as of November 2009

The OTD #1 contract constructs the entire 1,000-foot-long westbound approach from the toll plaza to the Skyway. When completed, the westbound approach structure will provide direct access to the westbound Skyway. In the eastbound direction, the contract will construct a portion of the eastbound structure and all of the eastbound foundations that are not in conflict with the existing bridge.

**Status:** On the westbound structure, the contractor has completed all work and is now proceeding with eastbound superstructure work. The contractor, MCM, re-established temporary construction access to the Skyway structure over the new westbound Oakland Touchdown on August 4.

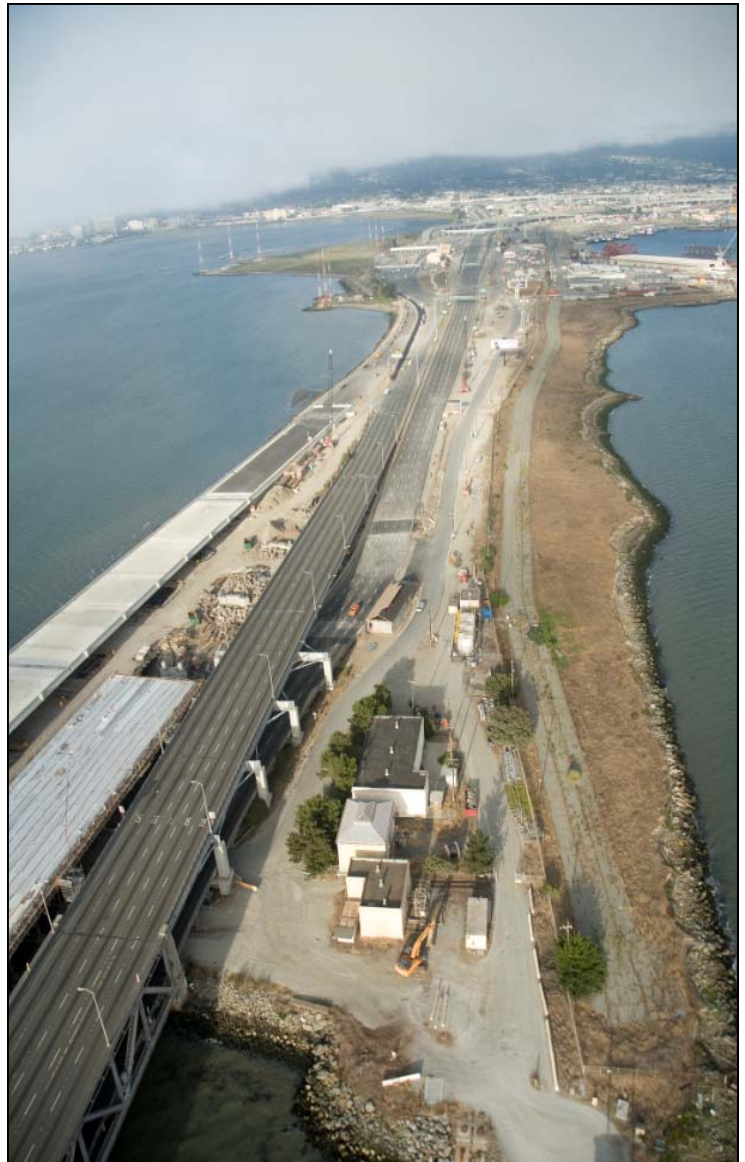
#### **G** Oakland Touchdown #2 Contract

Contractor: TBD

Current Capital Outlay Forecast: \$64.0 M

Status: In design

The OTD #2 contract will complete the eastbound approach structure from the end of the Skyway to Oakland. This work is critical to the eastbound opening of the new bridge, but cannot be completed until westbound traffic has been shifted off the existing upper deck to the new SAS bridge.



Oakland Touchdown Progress

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Other Contracts

A number of contracts needed to relocate utilities, clear areas of archeological artifacts, and prepare areas for future work have already been completed. The last major contract will be the eventual demolition and removal of the existing bridge, which by that time will have served the Bay Area for nearly 80 years. Following is a status of some the other East Span contracts.



Archeological Investigations

### East Span Interim Seismic Retrofit

Contractors: 1) California Engineering Contractors  
2) Balfour Beatty

Approved Capital Outlay Budget: \$30.8 M

Status: Completed October 2000

After the 1989 Loma Prieta Earthquake, and before the final retrofit strategy was determined for the East Span, Caltrans completed an interim retrofit of the existing bridge to prevent a catastrophic collapse of the bridge should a similar earthquake occur before the East Span was completely replaced. The interim retrofit was performed under two separate contracts that lengthened pier seats, added some structural members, and strengthened areas of the bridge so they would be more resilient during an earthquake.



Existing East Span of Bay Bridge

### Stormwater Treatment Measures

Contractor: Diablo Construction, Inc.

Approved Capital Outlay Budget: \$18.3 M

Status: Completed December 2008

The Stormwater Treatment Measures contract implemented a number of best practices for the management and treatment of stormwater runoff. Focused on the areas around and approaching the toll plaza, the contract added new drainage and built new bio-retention swales and other related constructs.



Stormwater Retention Basin



## Yerba Buena Island Substation

Contractor: West Bay Builders  
 Approved Capital Outlay Budget: \$11.6 M  
 Status: Completed May 2005

This contract relocated an electrical substation just east of the Yerba Buena Island Tunnel in preparation for the new East Span.

## Pile Installation Demonstration

Contractor: Manson and Dutra, Joint Venture  
 Approved Capital Outlay Budget: \$9.2 M  
 Status: Completed December 2000

While common in offshore drilling, the new East Span is one of the first bridges to use large-diameter battered piles in its foundations. To minimize project risks and build industry knowledge, a pile installation demonstration project was initiated to prove the efficacy of the proposed technology and methodology. The demonstration was highly successful and helped result in zero contract change orders or claims for pile driving on the project.

## H Existing Bridge Demolition

Contractor: TBD  
 Approved Capital Outlay Budget: \$239.2 M  
 Status: In Design

Design work on the contract will start in earnest as the opening of the new bridge to traffic approaches.



New YBI Electrical Substation

## I Electrical Cable Relocation

Contractor: Manson Construction  
 Approved Capital Outlay Budget: \$9.6 M  
 Status: Completed January 2008

A submerged cable from Oakland that is close to where the new bridge will touch down supplies electrical power to Treasure Island. To avoid any possible damage to the cable during construction, two new cables were run from Oakland to Treasure Island to replace the existing cable. The extra cable was funded by the Treasure Island Development Authority and its future development plans.

## Quarterly Environmental Compliance Highlights



Juvenile Peregrine Falcon (photo courtesy of Bob Anders)

Overall environmental compliance for the SFOBB East Span project has been a success. All weekly, monthly and annual compliance reports to resource agencies have been delivered on time. There are no comments from receiving agencies. The tasks for the current quarters are focused on mitigation monitoring. Key successes in this quarter are as follows:

- Bird monitoring was conducted weekly in the active construction area. Monitors did not observe any indication that birds were disturbed due to the East Span construction activities.
- Peregrine falcon monitoring was conducted typically a few times per week through mid-July 2009. Monitoring was concluded for the nesting season on July 20, 2009,

because the juvenile peregrines that successfully fledged in June had survived for one month and were spending less time in the immediate vicinity of their nest site at Pier E2.

- Canadian goose monitoring occurred in July and August 2009 along the I-80 roadway adjacent to the Emeryville Crescent. The presence of geese was more prevalent in early July, with few observations after that.
- Environmental compliance and stormwater pollution prevention (SWPP) inspections were conducted weekly at all active project sites. Environmental permit compliance staff continue to work closely with Caltrans construction and contractors to ensure compliance with environmental permits and regulations and to improve SWPP and best management practices.
- On July 7, 2009, Caltrans submitted a request to reinstate consultation with the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) in accordance with Section 7 of the Endangered Species Act. This consultation was needed to modify the project description for the



SFO Bay Bridge Air Bubble Curtain Sound Attenuation System (photo courtesy of Rob Aramayo)



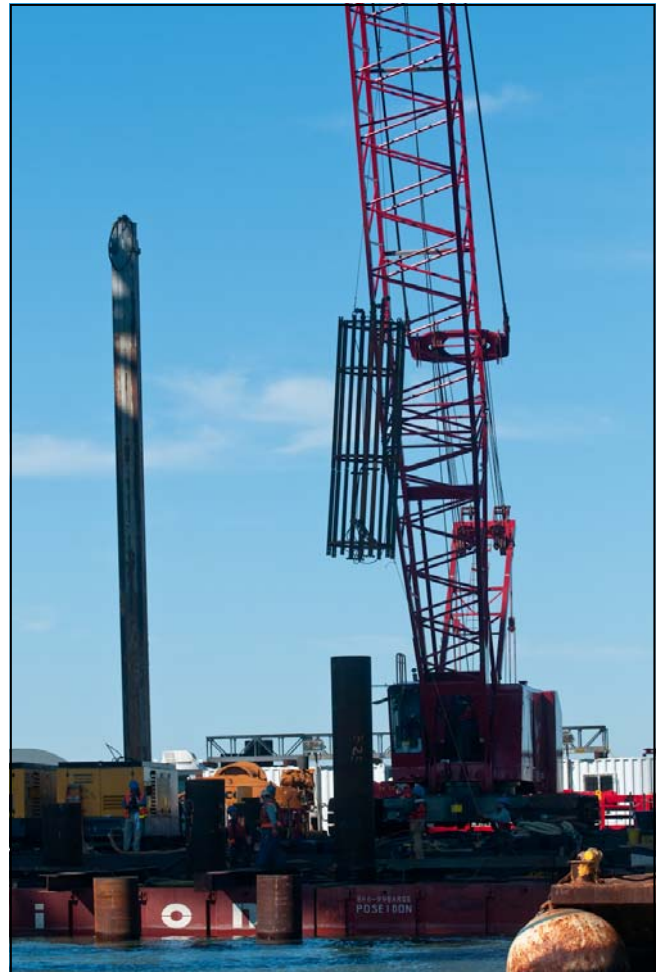


**Yerba Buena Island Transition Erosion Control Matting, Silt Fencing, Fiber Rolls and Check Dams**

implementation of underwater sound attenuation during the installation of temporary piles to support a temporary access trestle as part of the Self-Anchored Suspension span portion of the SFOBB Project.

- On July 8, 2009, Caltrans submitted a request for Amendment No. 25 to San Francisco Bay Conservation and Development Commission (BCDC) Permit No. 8-01 for a proposed temporary access trestle as part of the Self-Anchored Suspension span portion of the SFOBB Project.
- On July 17, 2009, Caltrans submitted a request for a Minor Amendment to California Department of Fish and Game, Incidental Take Permit No. 2081-2001-021-03, in accordance with section 783.6 (c) of the California Code of Regulations. The Minor Amendment would extend the expiration date of the Incidental Take Permit and include the recently state-listed longfin smelt.
- On July 20, 2009, results of the pre-construction eelgrass and bathymetric survey for the Emeryville Flats were made available. The survey results were needed to help determine construction approaches and avoidance of potential impacts to the eelgrass bed during construction of the Shorebird Roosting Island, which is part of the SFOBB construction mitigation.

- On August 21, 2009, the NMFS issued a Supplemental Biological Opinion and Conference Opinion for the SFOBB Project. The Supplemental Biological and Conference Opinions analyze the effects of the project's activities on the Evolutionary Significant Units and critical habitat of Sacramento River winter-run and Central Valley spring-run Chinook salmon, the Distinct Population Segment and critical habitat of Central Valley and Central California Coast steelhead, and the southern Distinct Population Segment and proposed critical habitat of North American green sturgeon.



**SFO Bay Bridge Air Bubble Curtain Sound Attenuation System**

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Other Completed Projects

The State Legislature in the 1990s identified seven of the nine state-owned toll bridges for seismic retrofit. In addition to the San Francisco-Oakland Bay Bridge, these included the Benicia-Martinez, Carquinez, Richmond-San Rafael and San Mateo-Hayward bridges in the Bay Area, and the Vincent Thomas and Coronado bridges in Southern California. Other than the East Span of the Bay Bridge, the retrofits of all of the bridges have been completed as planned.

### San Mateo-Hayward Bridge Seismic Retrofit Project

**Project Status: Completed 2000**

The San Mateo-Hayward Bridge seismic retrofit project focused on the strengthening of the high-rise portion of the span. The foundations of the bridge were significantly upgraded with additional piles.

### 1958 Carquinez Bridge Seismic Retrofit Project

**Project Status: Completed 2002**

The eastbound 1958 Carquinez Bridge was retrofitted in 2002 with additional reinforcement of the cantilever thru-truss structure.

### 1962 Benicia-Martinez Bridge Seismic Retrofit Project

**Project Status: Completed 2003**

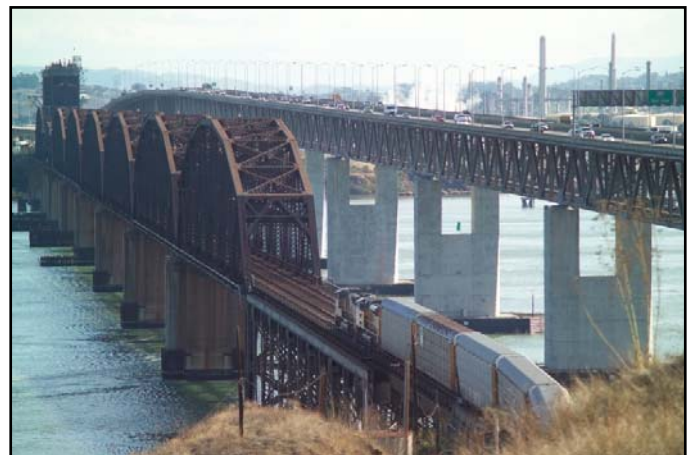
The southbound 1962 Benicia-Martinez Bridge was retrofitted to “Lifeline” status with the strengthening of the foundations and columns and the addition of seismic bearings that allow the bridge to move during a major seismic event. The Lifeline status means the bridge is designed to sustain minor to moderate damage after an event and to reopen quickly to emergency response traffic.



High-Rise Section of San Mateo-Hayward Bridge



1958 Carquinez Bridge (foreground) with the 1927 Span (middle) under Demolition and the New Alfred Zampa Memorial Bridge (background)



1962 Benicia-Martinez Bridge (right)



## Richmond-San Rafael Bridge Seismic Retrofit Project

**Project Status: Completed 2005**

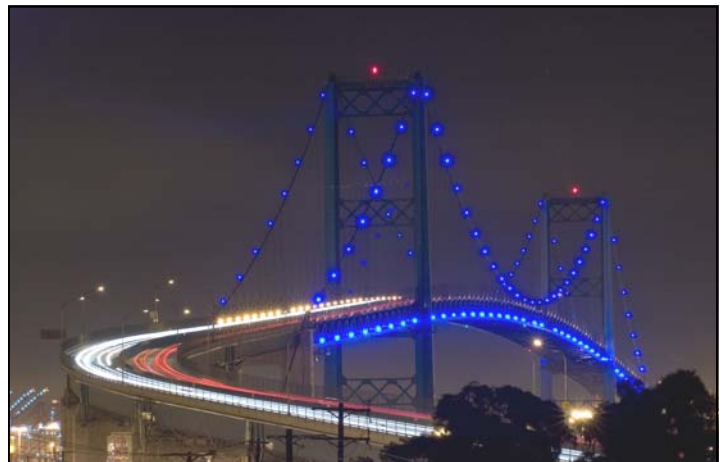
The Richmond-San Rafael Bridge was retrofitted to a “No Collapse” classification to avoid catastrophic failure during a major seismic event. The foundations, columns, and truss of the bridge were strengthened, and the entire low-rise approach viaduct from Marin County was replaced.



Richmond-San Rafael Bridge

## Los Angeles-Vincent Thomas Bridge Seismic Retrofit Project

**Project Status: Completed 2000**



Los Angeles-Vincent Thomas Bridge

## San Diego-Coronado Bridge Seismic Retrofit Project

**Project Status: Completed 2002**



San Diego-Coronado Bridge

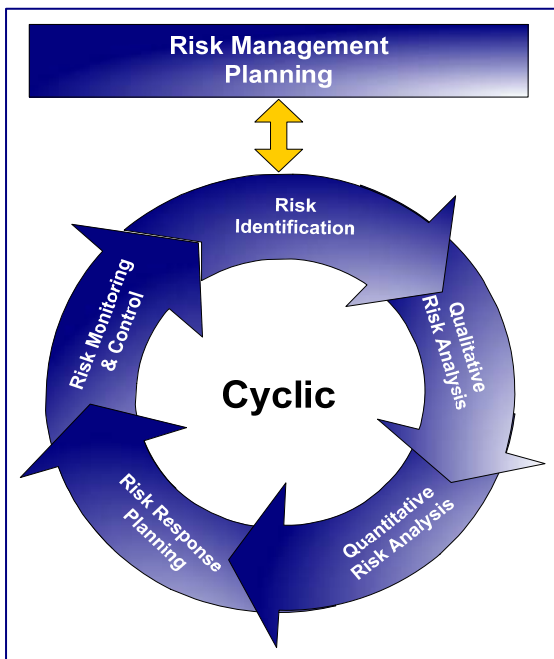
## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Risk Management Program Update

Assembly Bill (AB) 144 states that Caltrans must “regularly reassess its reserves for potential claims and unknown risks, incorporating information related to risks identified and quantified through its risk assessment processes.” AB 144 set a \$900 million Program Reserve (also referred to as the Program Contingency). The Program Contingency is currently at \$740.3 million, according to the TBPOC Approved Budget, unchanged from the previous quarter.

#### The Risk Management Process

Caltrans’ approved risk management plan provides for a systemic and continuous process of identifying, analyzing, and responding to project and program risks. Risk management plan implementation provides



for maximizing the probability and consequences of positive events and minimizing the probability and consequences of adverse events to project objectives (e.g., cost, schedule and quality). Each element of the risk management process is illustrated in the diagram above and is explained in the following paragraphs. The risk management cyclic process is performed on a quarterly basis and encompasses all identified risks related to the contracts, program, corridor, capital outlay, capital outlay support, and schedule.

1. Risk Management Planning – deciding how to approach, plan and execute the risk management activities for the project.
2. Risk Identification – determining which risks might affect the project and documenting their characteristics.
3. Qualitative Risk Analysis – prioritizing risks for subsequent further analysis or action by assessing and combining their probability and impacts.
4. Quantitative Risk Analysis – analyzing numerically the effect of identified risks on overall project objectives.
5. Risk Response Planning – developing options and actions to enhance opportunities and to reduce impact to project objectives.
6. Risk Monitoring and Control – tracking identified risks, monitoring residual risks, identifying new risks, executing risk response plans, and evaluating their effectiveness throughout the project life cycle.

Although the risk management processes above are presented as discreet elements with well-defined interfaces, in practice they often overlap and interact with each other.

#### What Risk Management Does and Does Not Include

Risk management addresses risks that may affect its defined project objectives such as cost, schedule, scope and quality. Given a project plan, risk management generally looks at ways in which the project may not go according to plan. Risk management focuses on the defined project scope and objectives, and therefore does not include 1) risks or possible decisions that may effectively end the project, such as the loss of funding, a natural disaster that destroys all or part of the construction, or acts of governments; or 2) risks or possible decisions that may materially change the project. If the project objectives are changed substantially, risk management will start afresh on the “new” project. For example, the YBI Detour contract was significantly changed by the addition of several YBITS #1 project foundations by contract change order as well as certain design enhancements made to the east and west “tie-ins” of



the YBI Detour structure. The risks of such decisions were not in the risk register of the original contract. In a nutshell, risk management is confined to quantifying risks that are intended to be covered by project and program contingency.

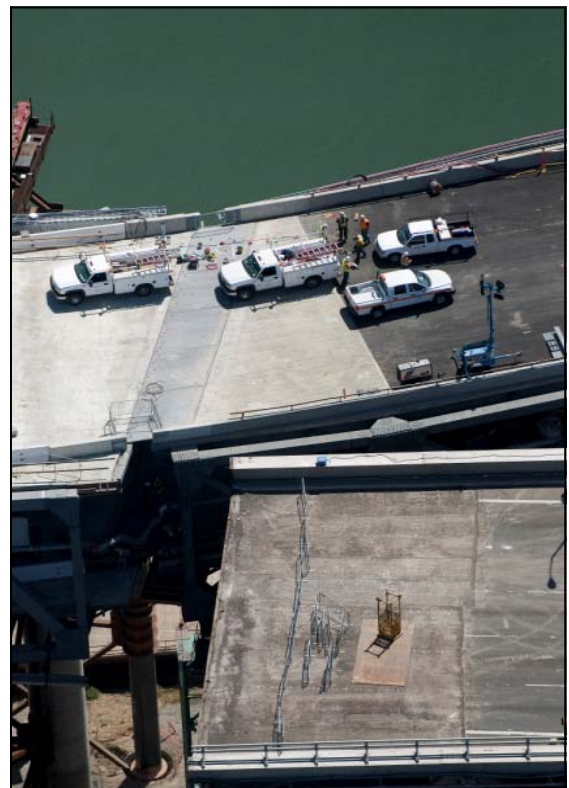
### **About “Risk” and “Opportunity”**

The concept of risk can include both upside and downside impacts. This means “risk” can describe uncertainties, which, if they occurred, would have a negative or harmful effect, and the same word can describe uncertainties, which, if they occurred, would be helpful. In short, there are two sides to risk — threats and opportunities. A risk that has no threat is a “pure opportunity.” It is simply an unplanned good thing that might happen. For example, a new design method might be released, which we can apply to benefit our project. Opportunity is the inverse of threat if a risk has both threat and opportunity. Where a risk variable exists on a continuous scale and there is uncertainty over the eventual outcome, instead of just defining the risk as the downside, it might also be possible to consider upside potential. For example, if we have included escalation at 5 percent in our budget for future contracts and this rate could range from, say, 3-7 percent depending on economic conditions at the time of advertisement, we have an opportunity in the 3-5 percent range and a threat in the 5-7 percent range. Opportunity and threat exist in the one risk. If the budget was based on 7 percent escalation, we would have only opportunity. If based on 3 percent, we would have only threat. Threat and opportunity can also depend on how we define the risk. For example, if the risk is that an external agency may relax its requirements and this saves us money relative to what we have budgeted currently in our plan, this is an opportunity. If the risk is defined as the possibility of the agency tightening its requirements and this adds to our costs, this is a threat. We can only separate the opportunity and threat if we are certain the agency may act one way and not the other. If the risk is that the agency may change its requirements, we could have impacts that range from positive to negative. We would have both opportunity and threat in the same risk, and the degree of each would depend on what we have budgeted in our plan. Uncertainty in the cost of major

contract change orders is another example of opportunity. If we enter an estimate into the change order log and the final outcome could range from less than the estimate to more than the estimate, we have both an opportunity and a threat. The degree of opportunity and threat depends on where the estimate lies within the range.

### **Risk Management for Projects in Design and Construction**

Projects in design have the greatest potential for opportunities because the projects are still open to changes. Risk reduction and avoidance are opportunities, as are value analysis, constructability reviews and innovations in design, construction methods and materials. Once a project enters construction, the project objectives (scope, schedule and cost) are fixed contractually. Any changes are made using a contract change order. The only opportunity to save money or time is from a negative change order such as resulting from a cost reduction incentive proposal by the contractor. Otherwise, change orders add cost and/or time to the project. So, the prime opportunity during construction is to reduce or eliminate risks.



**Yerbera Buena Island Detour: Aerial View of the Completed Detour**

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Risk Management Program Update (cont.)

#### POTENTIAL DRAW ON PROGRAM RESERVE (PROGRAM CONTINGENCY)

The approved TBSRP risk management plan provides for reporting quantitative cost risk results from the previous quarter's risk management assessment. The second-quarter quantitative risk management results are reported below.

Assembly Bill (AB) 144 states that Caltrans must "regularly reassess its reserves for potential claims and unknown risks, incorporating information related to risks identified and quantified through its risk assessment processes." AB 144 set a \$900 million Program Reserve (also referred to as the Program Contingency). The Program Contingency is currently at \$689.7 million, according to the TBPOC Approved Budget.

The risk management process calculates the potential draw on Program Contingency each quarter based on

the total of all risks and the contingencies remaining from the contracts.

Each contract in design has an assigned contingency allowance. A contract in construction has a remaining contingency, which is the difference between its budget and the sum of bid items, state furnished materials, contract change orders and remaining supplemental work. Capital outlay support has no identified contingency allowance. The total of the contingencies is the amount that is available to cover the risks of all contracts, program risks, and capital outlay support risks. The amount by which the sum of all risks exceeds the total of all contingencies represents a potential draw on the Program Contingency (Reserve).

As of the end of the second quarter of 2009, the probable draw on Program Contingency ranges from \$500 million to \$780 million. The 50 percent probable draw is \$650 million. The \$689.7 million TBPOC third quarter of 2009 Approved Budget Program Contingency is sufficient to cover identified risks to an

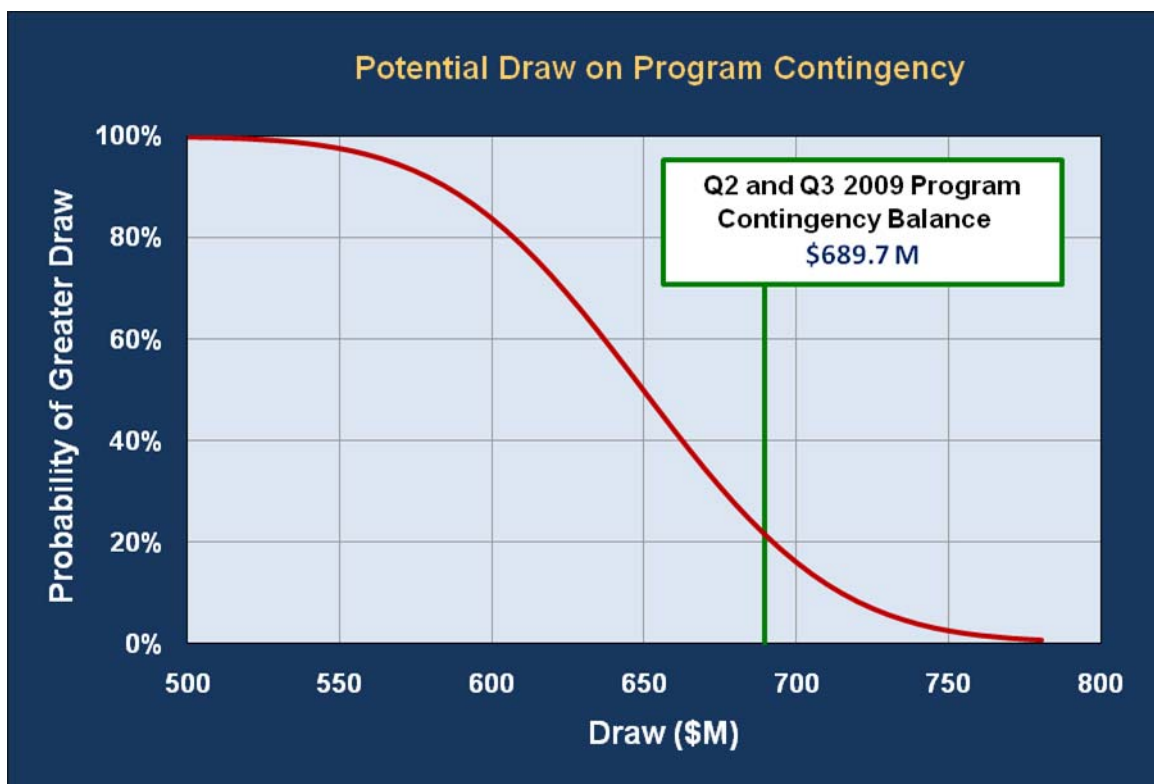


FIGURE 1 – POTENTIAL DRAW ON PROGRAM CONTINGENCY



80 percent confidence level. Ongoing risk mitigation actions will continue to be developed and implemented to reduce the potential draw on Program Contingency.

The curve in Figure 1 can be used to directly read off the probability of exceeding any value of cost. For example, there is about an 80 percent chance the potential draw on Program Contingency (Reserve) will exceed \$610 million, while there is a 20 percent chance it will exceed \$689.7 million.

## RISK MANAGEMENT DEVELOPMENTS

### SAS Contract

The “east end” orthotropic box girder (i.e., Lifts 12 – 14) working drawing process is proving to be significantly more complicated than the other lifts due to super-elevation transitions, horizontal curves, cable anchorages, hinge diaphragms, and other technical issues. Three-dimensional modeling of the area was successful in identifying conflicts. The development of working drawings has been extremely complicated and

continues to require a coordinated effort by Caltrans design and construction and the contractor’s shop fabrication drawing team. Caltrans and the contractor’s cross-functional working drawing campus team, as well as Caltrans management, continues to assess and implement ways to expedite working drawing reviews. Collocation of Caltrans, designer, and the contractor’s personnel is facilitating the development and approval of east-end working drawings.

Caltrans and the contractor continue to work together to develop and implement a joint planning schedule. The schedule is continuously assessed to identify future opportunities and actions to mitigate schedule risk. Team China continues to work to mitigate deck and tower fabrication challenges reported in the SAS contractor’s latest schedule update. Potential actions include the implementation of complex “mock-up” construction as well as the assessment of additional shop space, should the opportunity arise. Work could proceed in multiple shifts to expedite fabrication. The Corridor Schedule Team (CST) continues to assess the SAS and other contract schedules. The CST



SAS Westbound and Eastbound Temporary Support Structures Looking East

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Risk Management Program Update (cont.)

developed an intermediate-level critical path method schedule for the corridor to evaluate schedule risks. This corridor schedule is a summarization of the contract schedules submitted by the various contractors and schedules developed by the Department for the contracts in design. During development and updating of the corridor schedule, the CST and risk team incorporated several opportunities and other assumptions into the SAS schedule. Most of the recovery opportunities are in the construction phase of the SAS contract and allow for re-sequencing certain work activities to better reflect concurrent work and redefining phase completion requirements. An important aspect of this schedule and of all schedules for large projects is that there may be multiple critical paths on a project. Focusing on the path that is the most critical, while important, may divert attention from other near-critical paths. The CST continues to assess risk mitigation strategies and opportunities accordingly.

#### YBI Detour: Detailed Event Planning for YBI Detour Traffic Switch

Collaborative on-site meetings between Caltrans, the designer, and the contractor continued on-site and at various fabrication facilities. These meetings helped to resolve various constructability issues that may have caused significant impacts to the planned traffic switch schedule. Caltrans and the contractor performed a schedule risk analysis for the weekend traffic switch work and concluded that a four-day work window would likely be required to complete the work. The TBPOC subsequently approved the proposed four-day closure schedule. The traffic switch onto the YBI Detour contract occurred successfully in the third quarter of 2009. A significant portion of the YBI Detour contract risks were reduced or retired after the successful Labor Day weekend work was completed.

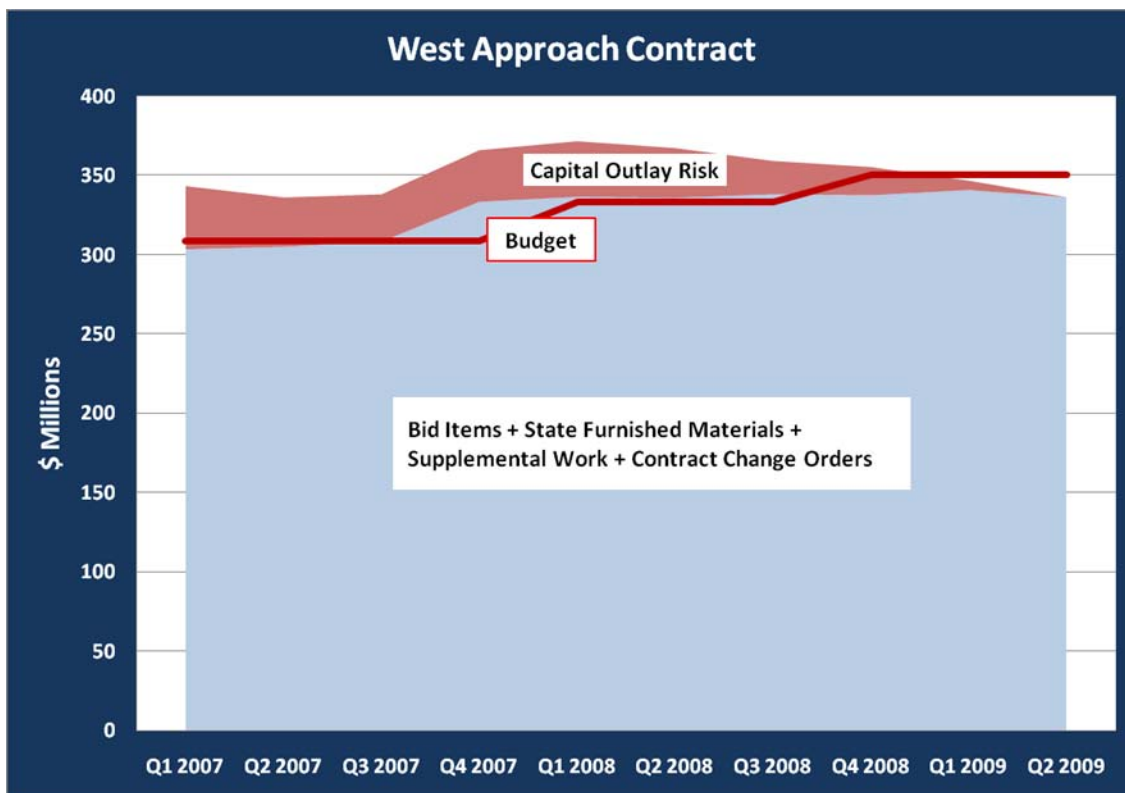


FIGURE 2 – WEST APPROACH TRENDS



## **West Approach Contract Closeout**

The West Approach contract was accepted on April 8, 2009. The project was completed under its current budget, there were no claims outstanding and the final estimate for the project was run in early July. Caltrans implemented a formal risk assessment process for the West Approach contract early in the contract. As the trend chart on the preceding page attests, the risk management team effectively forecast a range for the final project cost well in advance of project completion. This case study on the West Approach contract shows the value of using risk management to assist the project managers with program financial forecasting.

## **RISK MANAGEMENT LOOK AHEAD**

### **SAS Contract**

#### **Resolution of Fabrication Issues**

In the Second Quarter of 2009, Caltrans issued a contract change order to provide initial compensation for impacts to fabrication of the tower and the OBG Lifts 1 – 11. Caltrans is continuing negotiations in the third quarter of 2009 to resolve the remaining outstanding issues. A proposed resolution is to be presented to the TBPOC in the next quarter and will address contract time extensions for issues known prior to a definitive date. Other potential resolutions will include east-end shop drawing development and fabrication. A change order to address preliminary compensation and incentives to the shop drawing detailers will also be negotiated during the third quarter of 2009. This is considered to be the first of several steps that will be needed to resolve this issue.

#### **Schedule Partnership**

Forecasting shipment dates continues to be a challenge. With the pace of repairs not matching the pace needed to meet the contract schedule, it is likely that the first shipment will not depart China until late this year. These delays were recognized in the contractor's August schedule update, and will likely result in a significant increase in schedule risk costs in the third quarter of 2009. Project management will



**Existing Bridge Viaduct YB4 Span Lowered and Ready for Demolition**

engage the contractor to jointly develop a schedule for the remaining portion of the project. Such a schedule can be used as a planning tool to identify risks and their potential impacts to bridge opening. For example, Caltrans will work with the contractor to identify ways of rearranging the OBG and tower lifts among shipments to help mitigate project delays.

### **YBID Contract**

#### **Demolition**

The project risk management team will hold several workshops to assess the costs and benefits of demolishing the YB4 span “up in the air” versus lowering it to the ground for demolition. A matrix of risks will be quantified and help the project team decide whether demolishing the YB4 span closer to the ground will reduce schedule risks to the SAS contract and therefore be a more cost-effective strategy overall. This work and demolition of the remainder of the old bridge from the east tie-in to the west tie-in will occur over the next several months.

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Risk Management Program Update (cont.)

#### YBITS Contract

##### Hinge “K” Availability

Potential schedule risk may result if the YBITS #1 structure is ready for Hinge “K” closure, but the SAS contractor is not ready to vacate the area. Based on the status of the YBID and SAS contracts, the TBPOC approved moving the bid open date to December 15, 2009. However, a schedule gap may exist if additional delays are encountered on the SAS contract. An addition of contract working days to the YBITS #1 contract may be prudent to mitigate potential corridor schedule risk.

##### Integrated Shop Drawings Conflict Resolution

The design team will continue working on completing the integrated shop drawings (ISDs) to avoid submittal schedule risk and potential added costs resulting from conflict resolution during construction.

#### OTD #1 Contract

##### Shore Bird Habitat Design Approval

A rip-rap shore bird habitat is to be constructed by the OTD #1 contract as part of the ongoing environmental conservation efforts of Caltrans. To better protect the birds, the San Francisco Bay Conservation and Development Commission (BCDC) requested a change to the location of the habitat from 60 feet to 200 feet from the shore. The change requires marine access that may impact the Bay. The updated design is awaiting BCDC determination whether additional mitigation measures such as eel-grass replanting and Bay floor restoration will be necessary. Project management will be working with the various agencies to deliver this work without delaying contract completion.

##### Upcoming Construction Activities

On the bridge structure, installation of the electrical service platforms, the stressing of eastbound frame 1, and pulling in the pipe beams are scheduled to occur in the next few months. Once this work is complete, it is likely that additional risks can be retired. The OTD #1 contract is currently scheduled to complete in March 2010.

##### Bridge Opening Planning

The OTD #2 contract will place traffic on the westbound lanes and later on the eastbound. Detailed plans for the traffic switches are to be prepared, including a current evaluation of whether a single full bridge closure will be better than two one-way closures when traffic is put on the new structure.





## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Program Funding Status

AB 144 established a funding level of \$8.685 billion for the TBSRP. The bill specifies program funding sources as shown in *Table 1-Program Budget*.

**Table 1—Program Budget  
as of September 30, 2009 (\$ Millions)**

	Budgeted	Funding Available & Contributions
<b>Financing</b>		
Seismic Surcharge Revenue AB 1171	2,282.0	2,282.0
Seismic Surcharge Revenue AB 144	2,150.0	2,150.0
BATA Consolidation	820.0	820.0
<b>Subtotal - Financing</b>	<b>5,252.0</b>	<b>5,252.0</b>
<b>Contributions</b>		
Proposition 192	790.0	789.0
San Diego Coronado Toll Bridge Revenue Fund	33.0	33.0
Vincent Thomas Bridge	15.0	6.9
State Highway Account <sup>(1)(2)</sup>	745.0	745.0
Public Transportation Account <sup>(1)(3)</sup>	130.0	130.0
ITIP/SHOPP/Federal Contingency	448.0	100.0
Federal Highway Bridge Replacement and Rehabilitation (HBRR)	642.0	642.0
SHA - East Span Demolition	300.0	
SHA - "Efficiency Savings" <sup>(4)</sup>	130.0	10.0
Redirect Spillover	125.0	125.0
Motor Vehicle Account	75.0	75.0
<b>Subtotal - Contributions</b>	<b>3,433.0</b>	<b>2,655.9</b>
<b>Total Funding</b>	<b>8,685.0</b>	<b>7,907.9</b>
<b>Encumbered to Date</b>		<b>7,185.4</b>
<b>Remaining Unallocated</b>		<b>722.5</b>
<b>Expenditures:</b>		
Capital Outlay		4,763.2
State Operations		1,259.3
Total Expenditures		6,022.5
<b>Encumbrances:</b>		
Capital Outlay		1,151.0
State Operations		11.9
Total Encumbrances		1,162.9
<b>Total Expenditures and Encumbrances</b>		<b>7,185.4</b>
<p><sup>(1)</sup> The California Transportation Commission adopted a new schedule and changed the PTA/SHA split on December 15, 2005.</p> <p><sup>(2)</sup> To date, \$645 million has been transferred from the SHA to the TBSRP, including the full \$290 million transfer scheduled by the CTC to occur in 2005-06. An additional \$100 million has been expended directly from the account.</p> <p><sup>(3)</sup> To date, \$130 million has been transferred from the PTA to the TBSRP, including the full amount of all transfers scheduled by the CTC.</p> <p><sup>(4)</sup> To date, \$10 million has been transferred from the SHA to the TBSRP, representing the commitment of "Efficiency Savings" identified under AB 144. Approximately \$120 million remains to be distributed as scheduled by the CTC.</p>		
<p><b>Notes:</b> Program budget includes \$900 million program contingency.</p>		



## Summary of the Toll Bridge Oversight Committee (TBPOC) Expenses

Pursuant to Streets and Highways Code Section 30952.1 (d), expenses incurred by Caltrans, BATA, and the California Transportation Commission (CTC) for costs directly related to the duties associated with the TBPOC are to be reimbursed by toll revenues. *Table 3-Toll Bridge Program Oversight Committee Estimated Expenses: July 1, 2005 through September 30, 2009* shows expenses through June 30, 2009 for TBPOC functioning, support, and monthly and quarterly reporting.

**Table 2—CTC Toll Bridge Seismic Retrofit Program Contributions Adopted December 2005**  
Schedule of Contributions to the Toll Bridge Seismic Retrofit Program (\$ Millions)

Source	Description	2005-06 (Actual)	2006-07 (Actual)	2007-08 (Actual)	2008-09 (Actual)	2009-10 (Actual)	2010-11	2011-12	2012-13	2013-14	Total
AB 1171	SHA	290									290
	PTA	80	40								120
	Highway Bridge Replacement and Rehabilitation (HBRR)	100	100	100	42						342
	Contingency				1	99	100	100	148		448
AB 144	SHA*	2	8				53	50	17		130
	Motor Vehicle Account (MVA)	75									75
	Spillover		125								125
	SHA**									300	300
	<b>Total</b>	<b>547</b>	<b>273</b>	<b>100</b>	<b>43</b>	<b>99</b>	<b>153</b>	<b>150</b>	<b>165</b>	<b>300</b>	<b>1830</b>

\* Caltrans Efficiency Savings

\*\* SFOBB East Span Demolition Cost

**Table 3—Toll Bridge Program Oversight Committee**  
Estimated Expenses: July 1, 2005 through September 30, 2009  
(\$ Millions)

Agency/Program Activity	Expenses
<b>BATA</b>	0.8
<b>Caltrans</b>	1.7
<b>CTC</b>	1.2
<b>Reporting</b>	3.1
<b>Total Program</b>	<b>6.8</b>





Antioch Bridge

## Seismic Retrofit of the Dumbarton and Antioch Bridges



## SEISMIC RETROFIT OF DUMBARTON AND ANTIOCH BRIDGES

### Dumbarton Bridge Seismic Retrofit Project

#### Project Status: In Design

The Dumbarton Bridge was opened to traffic in 1982, linking the cities of Newark in Alameda County and East Palo Alto in San Mateo County. The 1.6-mile-long bridge carries average daily traffic of nearly 60,000 vehicles over its six lanes and has an eight-foot bicycle/pedestrian lane to the south.

Though located between the San Andreas and Hayward faults, the Dumbarton Bridge was not included in the Toll Bridge Seismic Retrofit Program based on evaluations made in the 1990s that concluded the bridge did not warrant retrofitting. The bridge has since been re-evaluated for seismic vulnerability based on more recent seismic engineering, which has shown the bridge to be susceptible to damage from a major earthquake.



Mock-Up of Dumbarton Pier Columns Undergoing Seismic Testing



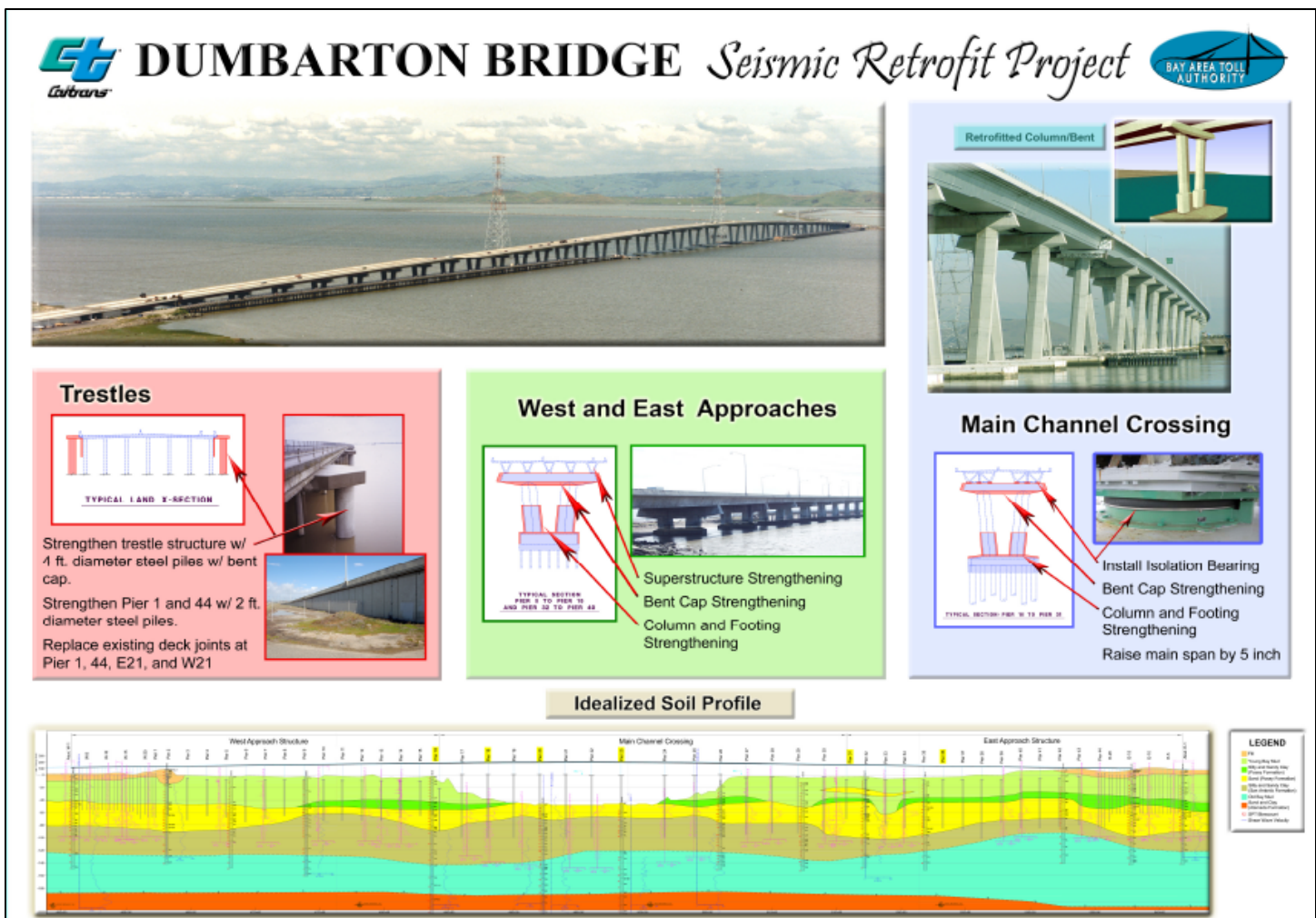
Existing Dumbarton Bridge Looking East toward the Alameda County Foothills

Based on the vulnerability studies and a follow-up sensitivity analysis of seismic risk, Caltrans and BATA decided to take steps towards retrofitting the Dumbarton Bridge, even though full funding for the project has not yet been identified. Using BATA toll bridge rehabilitation funding, a comprehensive seismic analysis of the bridge has commenced. This includes detailed geotechnical and geophysical investigations at the bridge and the development of a seismic retrofit strategy and design plans.

The current retrofit strategy for the Dumbarton Bridge includes superstructure and deck modifications, plus strengthening of the over land approach slab structures. Additional activities are identified in the attached diagram. The results of the seismic analysis and proposed retrofit strategy have been presented to the Toll Bridge Seismic Safety Peer Review Panel.

**Status:** On October 11, 2009, Governor Schwarzenegger approved Assembly Bill 1175 that added the Dumbarton and Antioch Bridges to the Toll Bridge Seismic Retrofit Program. BATA has now initiated efforts to raise tolls on the seven state-owned toll bridges in the Bay Area to, in part, fund the seismic retrofit of the Dumbarton and Antioch bridges.

BATA has already funded design plans for both bridge projects in anticipation of the projects being advertised in early 2010. The total estimated cost of these retrofits has been recently revised from \$950 million to \$750 million as project plans have been refined with reduced scope, which has minimized cost risks. In the future, the project progress report will be updated to better reflect the incorporation of these two projects into the Toll Bridge Seismic Retrofit Program.



## SEISMIC RETROFIT OF DUMBARTON AND ANTIOCH BRIDGES

### Antioch Bridge Seismic Retrofit Project

#### Project Status: In Design

Serving the Delta region of the Bay Area, the Antioch Bridge takes State Route 160 traffic over the San Joaquin River, linking eastern Contra Costa County with Sacramento County. The current bridge was opened in 1978 with one lane in each direction and carries an average of more than 10,000 vehicles a day. Approximately 1.8 miles long, the bridge is a steel girder support roadway on reinforced concrete columns and foundations.

Like the Dumbarton Bridge, the Antioch bridge was not included in the Toll Bridge Seismic Retrofit Program based on evaluations made in the 1990s that concluded that the bridge did not warrant retrofitting. The Antioch Bridge has since been re-evaluated for seismic vulnerability based on more recent seismic engineering, which has shown the bridge to be susceptible to damage from a major earthquake.

Based on the vulnerability studies and a follow-up sensitivity analysis of seismic risk, Caltrans and BATA decided to take steps toward retrofitting the Antioch Bridge, even though full funding for the project has not yet been identified. Using BATA toll bridge rehabilitation funding, a comprehensive seismic analysis of the bridge has commenced. This analysis includes detailed geotechnical and geophysical investigation at the bridge and the development of a seismic retrofit strategy and design plans.

The current retrofit strategy for the Antioch Bridge includes relatively minor modifications to the approach structure on Sherman Island, the addition of isolation bearings, strengthening of the columns, and hinge retrofits. The results of the seismic analysis and proposed retrofit strategy have been presented to the Toll Bridge Seismic Safety Peer Review Panel.



Antioch Bridge

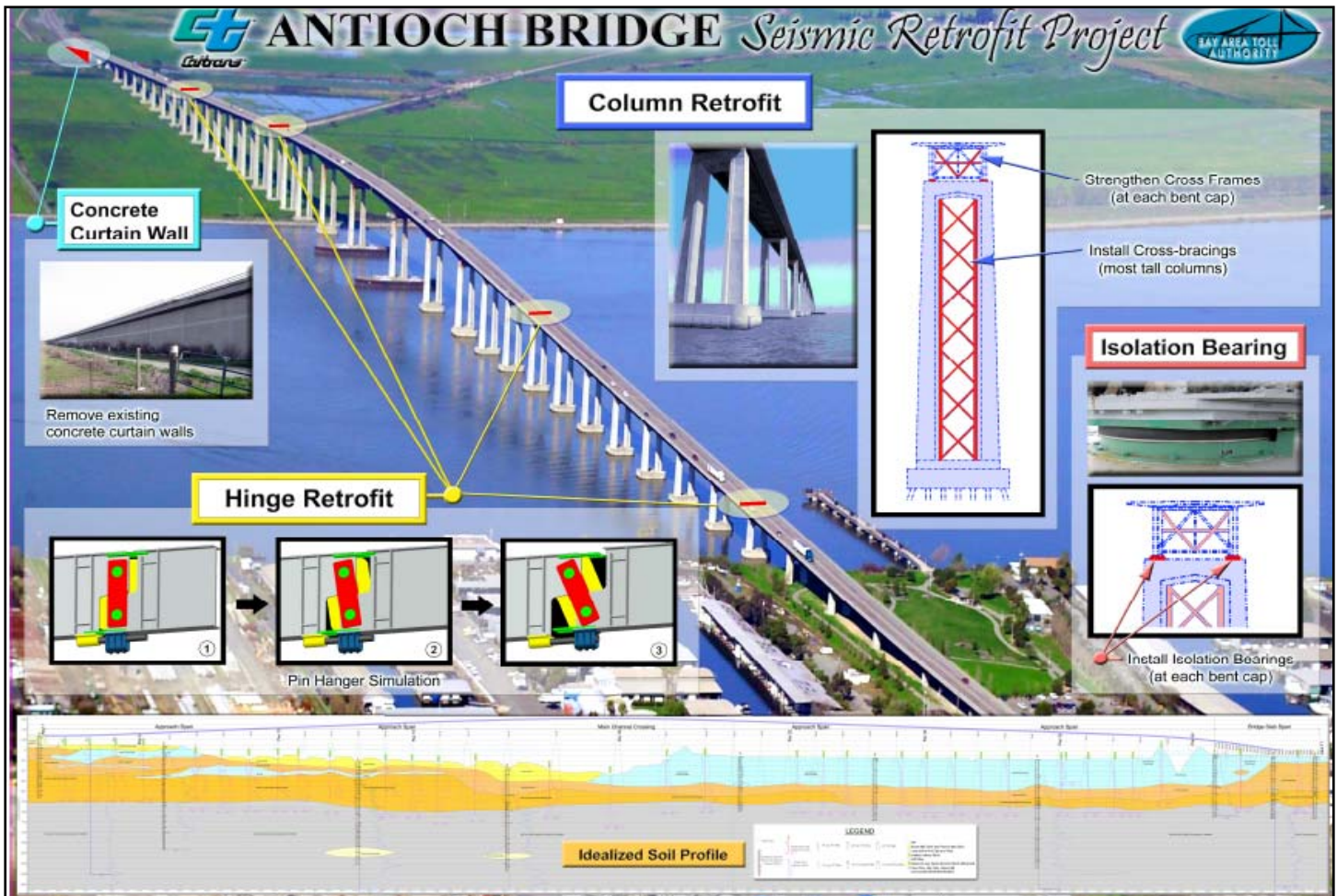


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Prototype of Bearing for the Antioch Bridge Seismic Retrofit Project



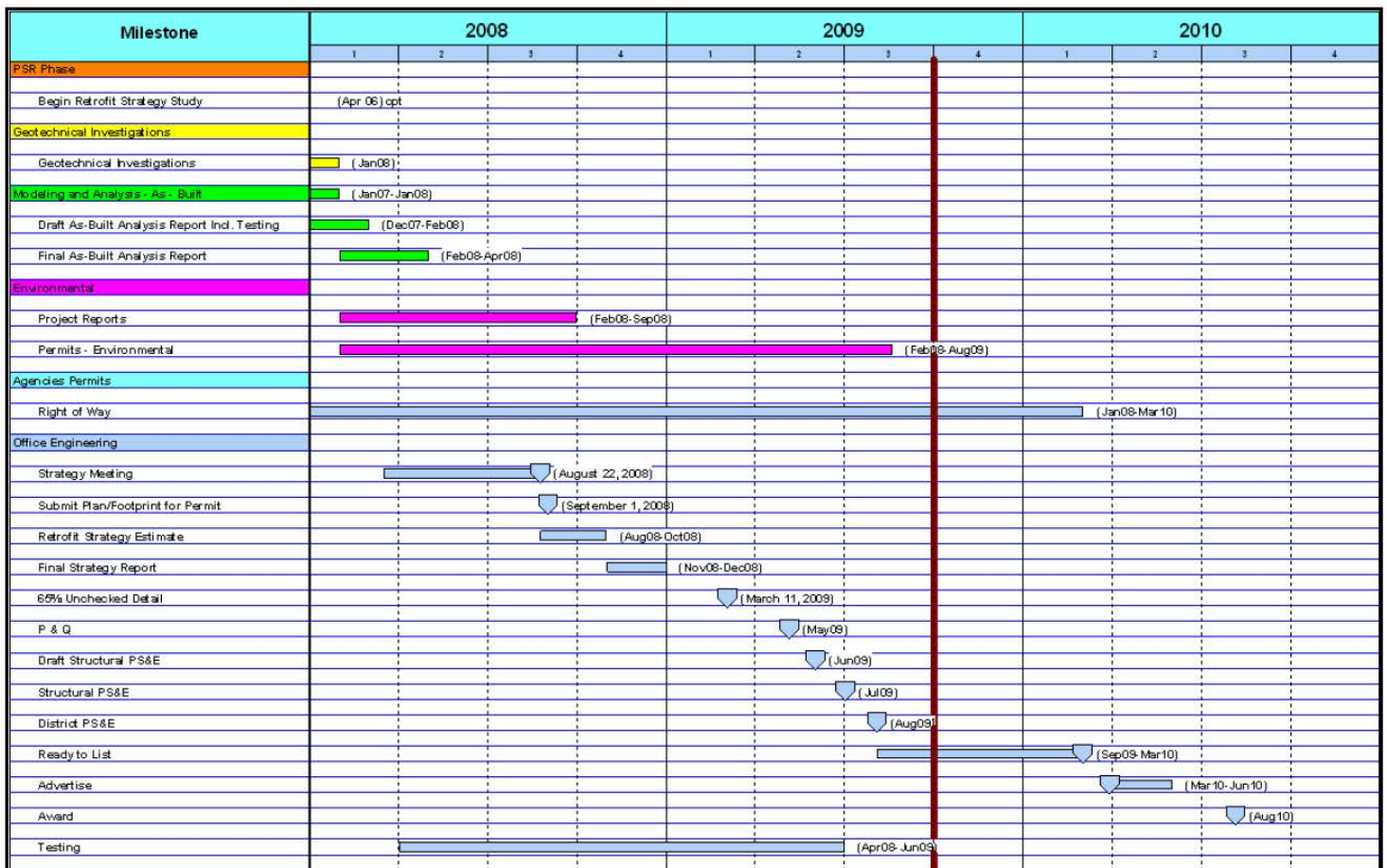
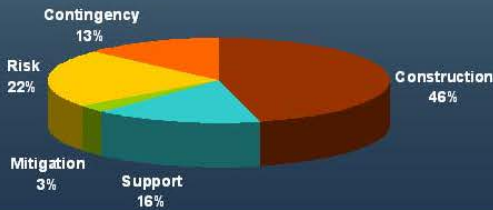
Seismic Retrofit Strategy Summary for Antioch Bridge

## Seismic Retrofits of Dumbarton and Antioch Bridges

### Project Cost and Schedule Summaries

# Total Project Costs – \$750 Million

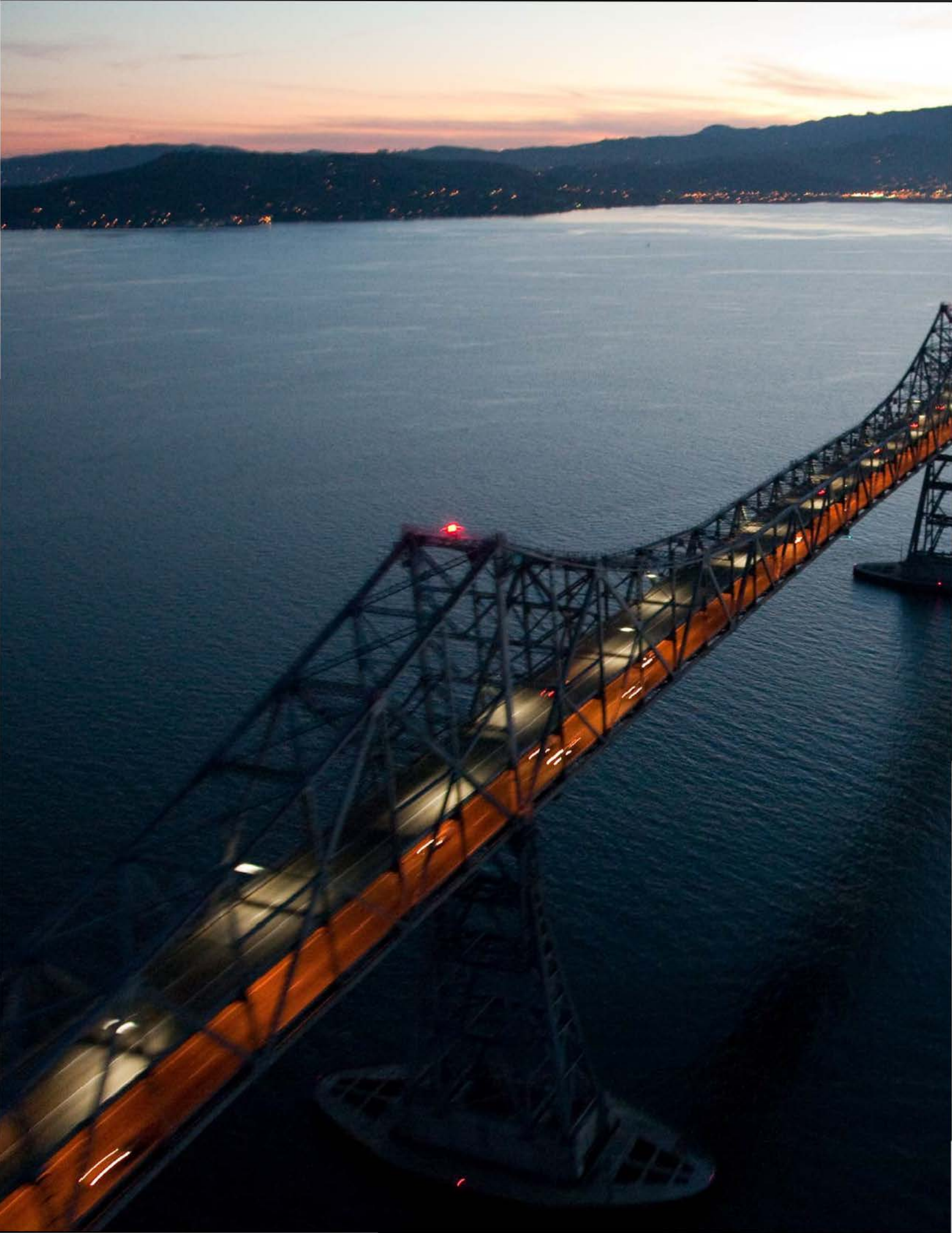
Description	Antioch (\$ Millions)	Dumbarton (\$ Millions)
CONSTRUCTION COST ESTIMATE (ESCALATION TO MID YEAR OF CONSTRUCTION)	\$98	\$195
CONTINGENCIES	45	65
SUBTOTAL CAPITAL COST ESTIMATE	143	260
SUPPORT COST ESTIMATE	39	95
MITIGATION COST ESTIMATE	13	10
RISK COST ESTIMATE	72	118
<b>TOTAL COST ESTIMATE</b>	<b>\$267</b>	<b>\$483</b>















Richmond –San Rafael Bridge

# REGIONAL MEASURE 1 TOLL BRIDGE PROGRAM



## REGIONAL MEASURE 1 PROGRAM

### New Benicia-Martinez Bridge Project

#### Project Status: New Bridge Completed 2007

The new Congressman George Miller Bridge opened to traffic in August 2007, taking its place alongside the existing 1962 Benicia-Martinez Bridge, which is named for Congressman Miller's father, the late George Miller, Jr. The new bridge carries five lanes of northbound Interstate 680 traffic, while the existing bridge is being upgraded to carry four lanes of southbound traffic and a new bicycle/pedestrian pathway.

Decades into the planning and construction, the new bridge is designed to a "Lifeline" seismic design standard, expected to be available for emergency response vehicles soon after a major seismic event. Constructed of lightweight concrete, the structure is one of the longest post-tensioned reinforced cast-in-place concrete bridges in the world. The new toll plaza, relocated from Benicia to Martinez, features the Bay Area's first FasTrak® express lanes, which vastly increase the throughput of vehicles using electronic toll collection.



New Benicia-Martinez Bridge Opened to Traffic in August 2007

### 1962 Benicia-Martinez Bridge Reconstruction Contract

Contractor: ACC/Top Grade, Joint Venture

Approved Capital Outlay Budget: \$59.5 M

Status: Complete

A two-year project to rehabilitate and reconfigure the original Benicia-Martinez Bridge began shortly after the opening of the new Congressman George Miller Bridge. The existing 1.2-mile roadway surface on the steel deck truss bridge is being modified to carry four lanes of southbound traffic (one more than before)—with shoulders on both sides—plus a bicycle/pedestrian path on the west side of the span that will connect to Park Road in Benicia and to Marina Vista Boulevard in Martinez.

#### ***Stage 1 – Reconstruction of East Side of Bridge and Approaches***

Completed in August 2008, this stage involved removal of the old toll plaza on the Benicia side of the bridge, deck repairs on the east side of the span, and repair of the roadway undulations on the southern approach just south of the Marina Vista interchange.



Mococo Road Bridge Jacking

## ***Stage 2 – Reconstruction of West Side of Bridge and Approaches and Construction of Bicycle/Pedestrian Pathway***

This stage began after southbound traffic was shifted from the west side of the bridge to the newly refurbished east side. It involves repairing the west-side bridge deck, repairing undulations on the west side of the roadway in Martinez, demolishing obsolete I-680/I-780 interchange structures, realigning southbound Interstate 680 for four lanes, and construction of the barrier separating traffic lanes from the bicycle/pedestrian path.

**Status:** A new southbound I-680 was opened to traffic in early August. The new bicycle/pedestrian path opened on August 29. The contract is now complete.



**Benicia-Martinez Bridge Newly Opened Pedestrian/Bicycle Pathway**



**Benicia-Martinez Bridge Pedestrian/Bicycle Pathway Opened to The Public**



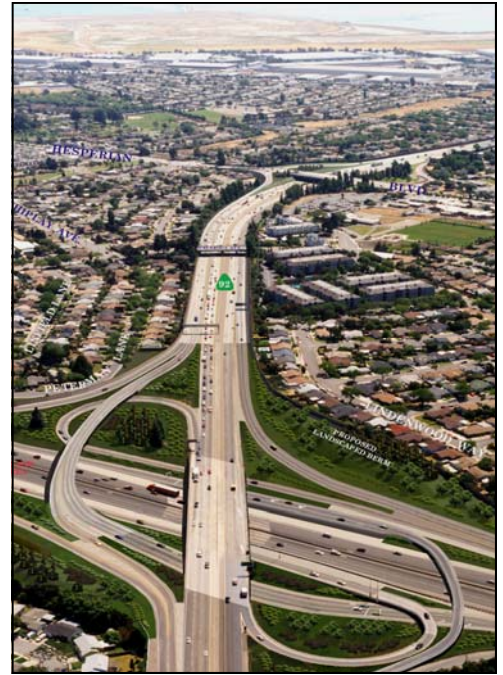
## REGIONAL MEASURE 1 PROGRAM

### Interstate 880/State Route 92 Interchange Reconstruction Project

**Project Status: Under Construction**

The Interstate 880/State Route 92 Interchange Reconstruction Project is the final project under the Regional Measure 1 Toll Bridge Program. Project completion fulfills a promise made to Bay Area voters in 1988 to deliver a slate of projects that help expand bridge capacity and improve safety on the bridges.

This corridor is consistently one of the Bay Area's most congested during the evening commute. This is due in part to the lane merging and weaving that is required by the existing cloverleaf interchange. The new interchange will feature direct freeway-to-freeway connector ramps that will increase traffic capacity and improve overall safety and traffic operations in the area. With the new direct-connector ramps, drivers coming off the San Mateo-Hayward Bridge can access Interstate 880 without having to compete with traffic headed onto east Route 92 from south Interstate 880 (see progress photos on pages 74 and 75).



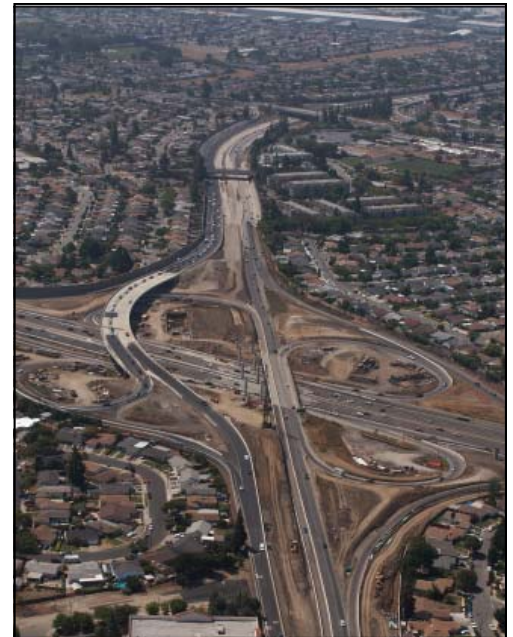
Future Interstate 880/State Route 92 Interchange (as simulated) ,Looking West toward San Mateo.

### Interstate 880/State Route 92 Interchange Reconstruction Contract

Contractor: Flatiron/Granite

Approved Capital Outlay Budget: \$155.0 M

Status: ?% Complete As Of November 2009



Overview of Progress to Date



Bents 2, 3 and 4 of the I-880/SR92 Interchange New Separation Bridge

### **Stage 1 – Construct East Route 92 to North Interstate 880 Connector**

The new east Route 92 to north Interstate 880 connector (ENCONN) is the most critical flyover structure for relieving congestion in the corridor. The ENCONN will be first used as a detour to allow for future stages of work, while keeping traffic flowing.

**Status:** ENCONN was completed and opened to detour traffic on May 16, 2009.

### **Stage 2 – Replace South Side of Route 92 Separation Structure**

By detouring eastbound Route 92 traffic onto ENCONN, the existing separation structure that carries SR92 over I-880 can be replaced. The existing structure will be cut lengthwise, and then demolished and replaced separately. In this stage, the south side of the structure will be replaced, while west Route 92 and south-Interstate-880-to-east-Route-92 traffic will stay on the remaining structure.

**Status:** Work on the south side of the separation structure has begun. Foundations and columns have been installed.

### **Stage 3 – Replace North Side of Route 92 Separation Structure**

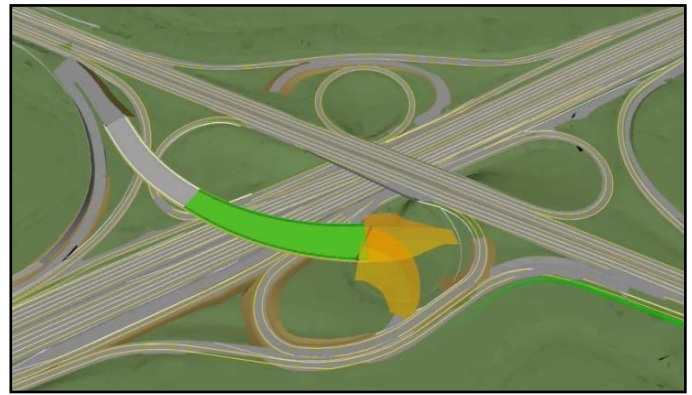
Upon completion of Stage 2, the existing north side of the separation structure will be demolished and replaced. Its traffic will then be shifted onto the newly reconstructed south side.

**Status:** Pending Stage 2.

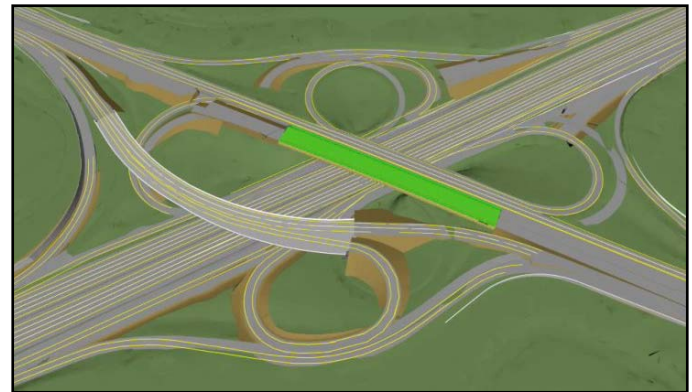
### **Stage 4 – Final Realignment and Other Work**

Upon completion of the Route 92 separation structure, east Route 92 traffic can be shifted onto its permanent alignment from the new ENCONN and directly under the new separation structure. Along with the ENCONN and Route 92 separation structures, several soundwalls, a pedestrian overcrossing on I-880 at Eldridge Avenue and other ramps and structures will also be reconstructed as part of this project.

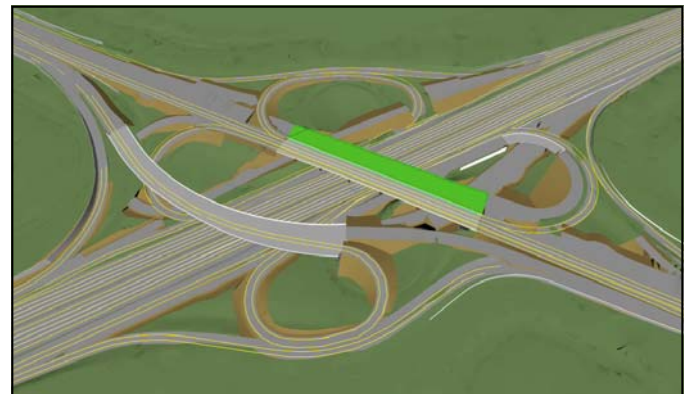
**Status:** Work continues on walls in the northwest (Stage 2), southeast and northeast quadrants, as well as on the Eldridge Ave. pedestrian overcrossing. The new pump station is ongoing and scheduled to be completed in February 2010. The Calaroga Bridge is 50 percent complete.



Stage 1 - Construct East Route 92 to North Interstate 880 Direct Connector



Stage 2 - Demolish and Replace South Side of Route 92 Separation Structure



Stage 3 - Demolish and Replace North Side of Route 92 Separation Structure



Stage 4 - Final Realignment and Other Work



## REGIONAL MEASURE 1 PROGRAM

### Other Completed Projects

#### San Mateo-Hayward Bridge-Widening Project

**Project Status: Completed 2003**



This project expanded the low-rise concrete trestle section of the San Mateo-Hayward Bridge to allow for three lanes in each direction to match the existing configuration of the high-rise steel section of the bridge.

Widening of the San Mateo-Hayward Bridge Trestle on Left

#### Richmond-San Rafael Bridge Rehabilitation Projects

**Project Status: Completed 2006**

Two major rehabilitation projects for the Richmond-San Rafael Bridge were funded and completed:

- (1) replacement of the western concrete approach trestle and ship-collision protection fender system; and
- (2) rehabilitation of deck joints and resurfacing of the bridge deck.

In 2005, along with the seismic retrofit of the bridge, the trestle and fender replacement work was completed as part of the same project. Under a separate contract in 2006, the bridge was resurfaced with a polyester concrete overlay along with the repair of numerous deck joints.



New Richmond-San Rafael Bridge West Approach Trestle under Construction

#### Richmond Parkway Construction Project

**Project Status: Completed 2001**

The final connections to the Richmond Parkway from Interstate 580 near the Richmond-San Rafael Bridge were completed in May 2001.



New Alfred Zampa Memorial (Carquinez) Bridge Soon after Opening to Traffic, with Crockett Interchange Still under Construction

## **New Alfred Zampa Memorial (Carquinez) Bridge Project**

### **Project Status: Completed 2003**

The new western span of the Carquinez Bridge, which replaced the original 1927 span, is a twin-towered suspension bridge with three mixed-flow lanes, a new carpool lane, shoulders and a bicycle and pedestrian pathway.

## **Bayfront Expressway (State Route 84) Widening Project**

### **Project Status: Completed 2004**


This project expanded and improved the roadway from the Dumbarton Bridge touchdown to the US 101/Marsh Road interchange by adding additional lanes and turn pockets and improving bicycle and pedestrian access in the area.





Aerial View of the Existing Bridge and the Completed Skyway on the Right





## APPENDICES

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## Appendix A-1: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through November 30, 2009 (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2009)	Cost To Date (10/2009)	Cost Forecast (10/2009)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>SFOBB East Span Replacement Project</b>						
Capital Outlay Support	959.3	-	959.3	781.9	1,203.1	243.8
Capital Outlay Construction	4,492.2	269.4	4,761.6	3,101.2	5,041.1	279.5
Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
<b>Total</b>	<b>5,486.6</b>	<b>266.1</b>	<b>5,752.7</b>	<b>3,883.8</b>	<b>6,251.9</b>	<b>499.2</b>
<b>SFOBB West Approach Replacement</b>						
Capital Outlay Support	120.0	-	120.0	116.7	117.0	(3.0)
Capital Outlay Construction	309.0	41.7	350.7	328.1	338.1	(12.6)
<b>Total</b>	<b>429.0</b>	<b>41.7</b>	<b>470.7</b>	<b>444.8</b>	<b>455.1</b>	<b>(15.6)</b>
<b>SFOBB West Span Retrofit</b>						
Capital Outlay Support	75.0	-	75.0	74.8	75.0	-
Capital Outlay Construction	232.9	-	232.9	227.2	232.9	-
<b>Total</b>	<b>307.9</b>	<b>-</b>	<b>307.9</b>	<b>302.0</b>	<b>307.9</b>	<b>-</b>
<b>Richmond-San Rafael Bridge Retrofit</b>						
Capital Outlay Support	134.0	(7.0)	127.0	126.7	127.0	-
Capital Outlay Construction	780.0	(90.5)	689.5	667.5	689.5	-
<b>Total</b>	<b>914.0</b>	<b>(97.5)</b>	<b>816.5</b>	<b>794.2</b>	<b>816.5</b>	<b>-</b>
<b>Benicia-Martinez Bridge Retrofit</b>						
Capital Outlay Support	38.1	-	38.1	38.1	38.1	-
Capital Outlay Construction	139.7	-	139.7	139.7	139.7	-
<b>Total</b>	<b>177.8</b>	<b>-</b>	<b>177.8</b>	<b>177.8</b>	<b>177.8</b>	<b>-</b>
<b>Carquinez Bridge Retrofit</b>						
Capital Outlay Support	28.7	-	28.7	28.8	28.7	-
Capital Outlay Construction	85.5	-	85.5	85.4	85.5	-
<b>Total</b>	<b>114.2</b>	<b>-</b>	<b>114.2</b>	<b>114.2</b>	<b>114.2</b>	<b>-</b>
<b>San Mateo-Hayward Bridge Retrofit</b>						
Capital Outlay Support	28.1	-	28.1	28.1	28.1	-
Capital Outlay Construction	135.4	-	135.4	135.3	135.4	-
<b>Total</b>	<b>163.5</b>	<b>-</b>	<b>163.5</b>	<b>163.4</b>	<b>163.5</b>	<b>-</b>
<b>Vincent Thomas Bridge Retrofit (Los Angeles)</b>						
Capital Outlay Support	16.4	-	16.4	16.4	16.4	-
Capital Outlay Construction	42.1	-	42.1	42.0	42.1	-
<b>Total</b>	<b>58.5</b>	<b>-</b>	<b>58.5</b>	<b>58.4</b>	<b>58.5</b>	<b>-</b>
<b>San Diego-Coronado Bridge Retrofit</b>						
Capital Outlay Support	33.5	-	33.5	33.2	33.5	-
Capital Outlay Construction	70.0	-	70.0	69.4	70.0	-
<b>Total</b>	<b>103.5</b>	<b>-</b>	<b>103.5</b>	<b>102.6</b>	<b>103.5</b>	<b>-</b>
<b>Subtotal Capital Outlay Support</b>						
	1,433.1	(7.0)	1,426.1	1,244.7	1,666.9	240.8
<b>Subtotal Capital Outlay</b>						
	6,286.8	220.6	6,507.4	4,795.8	6,774.3	266.9
<b>Subtotal Other Budgeted Capital</b>						
	35.1	(3.3)	31.8	0.7	7.7	(24.1)
<b>Miscellaneous Program Costs</b>						
	30.0	-	30.0	24.7	30.0	-
<b>Subtotal Toll Bridge Seismic Retrofit Program</b>						
	7,785.0	210.3	7,995.3	6,065.9	8,478.9	483.6
<b>Programatic Risk</b>						
	-	-	-	-	165.4	165.4
<b>Program Contingency</b>						
	900.0	(210.3)	689.7	-	40.7	(649.0)
<b>Total Toll Bridge Seismic Retrofit Program</b>						
	8,685.0	-	8,685.0	6,065.9	8,685.0	-

Note: Details may not sum to totals due to rounding effects.

## Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through November 30, 2009 (\$ Millions)

Bridge	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and Encumbrances as of Oct 2009 See Note (1)	Estimated Costs not yet Spent or Encumbered as of Oct 2009	Total Forecast as of Oct 2009
a	b	c	d	e	f = d + e
Other Completed Projects					
Capital Outlay Support	144.9	144.9	144.6	0.3	144.9
Capital Outlay	472.6	472.6	472.6	0.1	472.7
Total	617.5	617.5	617.2	0.4	617.6
Richmond-San Rafael					
Capital Outlay Support	134.0	127.0	126.7	0.3	127.0
Capital Outlay	698.0	689.5	674.2	15.3	689.5
Project Reserves	82.0	-	-	-	-
Total	914.0	816.5	800.9	15.6	816.5
West Span Retrofit					
Capital Outlay Support	75.0	75.0	74.8	0.2	75.0
Capital Outlay	232.9	232.9	232.7	0.2	232.9
Total	307.9	307.9	307.5	0.4	307.9
West Approach					
Capital Outlay Support	120.0	120.0	117.5	(0.5)	117.0
Capital Outlay	309.0	350.7	342.5	(4.4)	338.1
Total	429.0	470.7	460.0	(4.9)	455.1
SFOBB East Span - Skyway					
Capital Outlay Support	197.0	181.0	181.2	(0.1)	181.1
Capital Outlay	1,293.0	1,254.1	1,412.1	(158.0)	1,254.1
Total	1,490.0	1,435.1	1,593.3	(158.1)	1,435.2
SFOBB East Span - SAS- Superstructure					
Capital Outlay Support	214.6	214.6	191.0	221.9	412.9
Capital Outlay	1,753.7	1,753.7	1,649.6	364.5	2,014.1
Total	1,968.3	1,968.3	1,840.6	586.4	2,427.0
SFOBB East Span - SAS- Foundations					
Capital Outlay Support	62.5	41.0	37.6	1.0	38.6
Capital Outlay	339.9	307.3	308.7	(1.4)	307.3
Total	402.4	348.3	346.3	(0.4)	345.9
Small YBI Projects					
Capital Outlay Support	10.6	10.6	10.1	0.5	10.6
Capital Outlay	15.6	15.6	16.6	(0.9)	15.7
Total	26.2	26.2	26.7	(0.4)	26.3
YBI Detour					
Capital Outlay Support	29.5	66.0	76.4	9.1	85.5
Capital Outlay	131.9	492.8	493.0	11.0	504.0
Total	161.4	558.8	569.4	20.1	589.5
YBI - Transition Structures					
Capital Outlay Support	78.7	78.7	16.4	89.1	105.5
Capital Outlay	299.4	276.1	0.1	285.8	285.9
Total	378.1	354.8	16.5	374.9	391.4
Oakland Touchdown					
Capital Outlay Support	74.4	74.4	68.3	27.0	95.3
Capital Outlay	283.8	283.8	218.0	71.0	289.0
Total	358.2	358.2	286.3	98.0	384.3
East Span Other Small Project					
Capital Outlay Support	212.3	213.3	208.7	4.8	213.5
Capital Outlay	170.8	170.8	94.0	52.6	146.6
Total	383.1	384.1	302.7	57.4	360.1
Existing Bridge Demolition					
Capital Outlay Support	79.7	79.7	0.4	59.6	60.0
Capital Outlay	239.2	239.2	-	232.1	232.1
Total	318.9	318.9	0.4	291.7	292.1
Miscellaneous Program Costs	30.0	30.0	25.4	4.6	30.0
Total Capital Outlay Support (2)	1,463.2	1,456.2	1,279.1	417.8	1,696.9
Total Capital Outlay	6,321.8	6,539.1	5,914.1	867.9	6,782.0
Program Total	7,785.0	7,995.3	7,193.2	1,285.7	8,478.9

(1). Funds allocated to project or contract for Capital Outlay and Support needs includes Capital Outlay Support total allocation for FY 06/07.

(2). BSA provided a distribution of program contingency in December 2004 based on Bechtel Infrastructure Corporation input.

This column is subject to revision upon completion of Department's risk assessment update.

(3). Total Capital Outlay Support includes program indirect costs.

Notes: \* Budget for Richmond-San Rafael Bridge includes \$16.9 million of deck joint rehabilitation work that is considered to be eligible for seismic retrofit program funding.

Note: Details may not sum to totals due to rounding effects.



## Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through November 30, 2009 (\$ Millions)

Contract	EA Number	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2009)	Cost To Date (10/2009)	Cost Forecast (10/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>San Francisco-Oakland Bay Bridge</b>							
<b>East Span Replacement Project</b>							
<b>East Span - Skyway</b>	<b>01202X</b>						
Capital Outlay Support		197.0	(16.0)	181.0	181.1	181.1	0.1
Capital Outlay Construction		1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-
<b>Total</b>		<b>1,490.0</b>	<b>(54.9)</b>	<b>1,435.1</b>	<b>1,418.0</b>	<b>1,435.2</b>	<b>0.1</b>
<b>East Span - SAS E2/T1 Foundations</b>	<b>0120EX</b>						-
Capital Outlay Support		52.5	(21.5)	31.0	28.4	28.6	(2.4)
Capital Outlay Construction		313.5	(32.6)	280.9	275.0	280.9	-
<b>Total</b>		<b>366.0</b>	<b>(54.1)</b>	<b>311.9</b>	<b>303.4</b>	<b>309.5</b>	<b>(2.4)</b>
<b>East Span - SAS Superstructure</b>	<b>0120FX</b>						
Capital Outlay Support		214.6	-	214.6	186.9	412.9	198.3
Capital Outlay Construction		1,753.7	-	1,753.7	836.0	2,014.1	260.4
<b>Total</b>		<b>1,968.3</b>	<b>-</b>	<b>1,968.3</b>	<b>1,022.9</b>	<b>2,427.0</b>	<b>458.7</b>
<b>SAS W2 Foundations</b>	<b>0120CX</b>						
Capital Outlay Support		10.0	-	10.0	9.2	10.0	-
Capital Outlay Construction		26.4	-	26.4	25.8	26.4	-
<b>Total</b>		<b>36.4</b>	<b>-</b>	<b>36.4</b>	<b>35.0</b>	<b>36.4</b>	<b>-</b>
<b>YBI South/South Detour</b>	<b>0120RX</b>						
Capital Outlay Support		29.4	36.6	66.0	74.3	85.5	19.5
Capital Outlay Construction		132.0	360.8	492.8	399.3	504.0	11.2
<b>Total</b>		<b>161.4</b>	<b>397.4</b>	<b>558.8</b>	<b>473.6</b>	<b>589.5</b>	<b>30.7</b>
<b>YBI Transition Structures (see notes below)</b>	<b>0120PX</b>						
Capital Outlay Support		78.7	-	78.7	27.3	105.5	26.8
Capital Outlay Construction		299.3	(23.2)	276.1	-	285.9	9.8
<b>Total</b>		<b>378.0</b>	<b>(23.2)</b>	<b>354.8</b>	<b>27.3</b>	<b>391.4</b>	<b>36.6</b>
<b>* YBI- Transition Structures</b>							
<b>Contract No. 1</b>							
Capital Outlay Support					7.5	65.1	
Capital Outlay Construction					-	223.2	
<b>Total</b>					<b>7.5</b>	<b>288.3</b>	
<b>* YBI- Transition Structures</b>							
<b>Contract No. 2</b>							
Capital Outlay Support					3.3	23.4	
Capital Outlay Construction					-	59.4	
<b>Total</b>					<b>3.3</b>	<b>82.8</b>	
<b>* YBI- Transition Structures</b>							
<b>Contract No. 3 Landscape</b>							
Capital Outlay Support					-	1.0	
Capital Outlay Construction					-	3.3	
<b>Total</b>					<b>-</b>	<b>4.3</b>	
<b>Oakland Touchdown (see notes below)</b>							
<b>OTD Submarine Cable</b>	<b>01204X</b>						
Capital Outlay Support		74.4	-	74.4	66.4	95.3	20.9
Capital Outlay Construction		283.8	-	283.8	196.9	289.0	5.2
<b>Total</b>		<b>358.2</b>	<b>-</b>	<b>358.2</b>	<b>263.3</b>	<b>384.3</b>	<b>26.1</b>
<b>* OTD Submarine Cable</b>							
Capital Outlay Support					0.9	0.9	
Capital Outlay Construction					7.9	9.6	
<b>Total</b>					<b>8.8</b>	<b>10.5</b>	
<b>* OTD No. 1 (Westbound)</b>							
Capital Outlay Support					40.1	50.4	
Capital Outlay Construction					189.1	211.0	
<b>Total</b>					<b>229.2</b>	<b>261.4</b>	
<b>* OTD No. 2 (Eastbound)</b>							
Capital Outlay Support					4.6	20.5	
Capital Outlay Construction					-	64.0	
<b>Total</b>					<b>4.6</b>	<b>84.5</b>	
<b>* OTD Electrical Systems</b>							
Capital Outlay Support					0.8	1.5	
Capital Outlay Construction					-	4.4	
<b>Total</b>					<b>0.8</b>	<b>5.9</b>	

Notes: YBI Transition Structures and Oakland Touchdown Cost-to-Date and Cost Forecast includes prior-to-split Capital Outlay

Note: Details may not sum to totals due to rounding effects.

## Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through November 30, 2009 (\$ Millions) (continued)

Contract	EA Number	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (10/2009)	Cost To Date (10/2009)	Cost Forecast (10/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>Existing Bridge Demolition</b>	<b>01209X</b>						
Capital Outlay Support		79.7	-	79.7	0.4	60.0	(19.7)
Capital Outlay Construction		239.2	-	239.2	-	232.1	(7.1)
<b>Total</b>		<b>318.9</b>	<b>-</b>	<b>318.9</b>	<b>0.4</b>	<b>292.1</b>	<b>(26.8)</b>
<b>YBI/SAS Archeology</b>	<b>01207X</b>						
Capital Outlay Support		1.1	-	1.1	1.1	1.1	-
Capital Outlay Construction		1.1	-	1.1	1.1	1.1	-
<b>Total</b>		<b>2.2</b>	<b>-</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>-</b>
<b>YBI - USCG Road Relocation</b>	<b>0120QX</b>						
Capital Outlay Support		3.0	-	3.0	2.7	3.0	-
Capital Outlay Construction		3.0	-	3.0	2.8	3.0	-
<b>Total</b>		<b>6.0</b>	<b>-</b>	<b>6.0</b>	<b>5.5</b>	<b>6.0</b>	<b>-</b>
<b>YBI - Substation and Viaduct</b>	<b>0120GX</b>						
Capital Outlay Support		6.5	-	6.5	6.4	6.5	-
Capital Outlay Construction		11.6	-	11.6	11.3	11.6	-
<b>Total</b>		<b>18.1</b>	<b>-</b>	<b>18.1</b>	<b>17.7</b>	<b>18.1</b>	<b>-</b>
<b>Oakland Geofill</b>	<b>01205X</b>						
Capital Outlay Support		2.5	-	2.5	2.5	2.5	-
Capital Outlay Construction		8.2	-	8.2	8.2	8.2	-
<b>Total</b>		<b>10.7</b>	<b>-</b>	<b>10.7</b>	<b>10.7</b>	<b>10.7</b>	<b>-</b>
<b>Pile Installation Demonstration Project</b>	<b>01208X</b>						
Capital Outlay Support		1.8	-	1.8	1.8	1.8	-
Capital Outlay Construction		9.2	-	9.2	9.2	9.2	-
<b>Total</b>		<b>11.0</b>	<b>-</b>	<b>11.0</b>	<b>11.0</b>	<b>11.0</b>	<b>-</b>
<b>Stormwater Treatment Measures</b>	<b>0120JX</b>						
Capital Outlay Support		6.0	2.0	8.0	8.1	8.2	0.2
Capital Outlay Construction		15.0	3.3	18.3	16.7	18.3	-
<b>Total</b>		<b>21.0</b>	<b>5.3</b>	<b>26.3</b>	<b>24.8</b>	<b>26.5</b>	<b>0.2</b>
<b>Right-of-Way and Environmental Mitigation</b>	<b>0120X9</b>						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay & Right-of-Way		72.4	-	72.4	51.2	72.4	-
<b>Total</b>		<b>72.4</b>	<b>-</b>	<b>72.4</b>	<b>51.2</b>	<b>72.4</b>	<b>-</b>
<b>Sunk Cost - Existing East Span Retrofit</b>	<b>04343X &amp; 04300X</b>						
Capital Outlay Support		39.5	-	39.5	39.5	39.5	-
Capital Outlay Construction		30.8	-	30.8	30.8	30.8	-
<b>Total</b>		<b>70.3</b>	<b>-</b>	<b>70.3</b>	<b>70.3</b>	<b>70.3</b>	<b>-</b>
<b>Other Capital Outlay Support</b>							
Environmental Phase		97.7	-	97.7	97.7	97.7	-
Pre-Split Project Expenditures		44.9	-	44.9	44.9	44.9	-
Non-project Specific Costs		20.0	(1.0)	19.0	3.2	19.0	-
<b>Total</b>		<b>162.6</b>	<b>(1.0)</b>	<b>161.6</b>	<b>145.8</b>	<b>161.6</b>	<b>-</b>
<b>Subtotal Capital Outlay Support</b>		<b>959.3</b>	<b>-</b>	<b>959.3</b>	<b>781.9</b>	<b>1,203.1</b>	<b>243.8</b>
<b>Subtotal Capital Outlay Construction</b>		<b>4,492.2</b>	<b>269.4</b>	<b>4,761.6</b>	<b>3,101.2</b>	<b>5,041.1</b>	<b>279.5</b>
<b>Other Budgeted Capital</b>		<b>35.1</b>	<b>(3.3)</b>	<b>31.8</b>	<b>0.7</b>	<b>7.7</b>	<b>(24.1)</b>
<b>Total SFOBB East Span Replacement Project</b>		<b>5,486.6</b>	<b>266.1</b>	<b>5,752.7</b>	<b>3,883.8</b>	<b>6,251.9</b>	<b>499.2</b>

Note: Details may not sum to totals due to rounding effects.



## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions)

Project	EA Number	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (11/2009)	Cost To Date (11/2009)	Cost Forecast (11/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>New Benicia-Martinez Bridge Project</b>							
<b>New Bridge</b>	<b>00603_</b>						
Capital Outlay Support							
BATA Funding		84.9	6.9	91.8	91.8	91.8	-
Non-BATA Funding		-	0.1	0.1	0.1	0.1	-
Subtotal		84.9	7.0	91.9	91.9	91.9	-
Capital Outlay Construction				-			-
BATA Funding		661.9	94.6	756.5	753.8	756.5	-
Non-BATA Funding		10.1	-	10.1	10.1	10.1	-
Subtotal		672.0	94.6	766.6	763.9	766.6	-
<b>Total</b>		756.9	101.6	858.5	855.8	858.5	-
<b>I-680/I-780 Interchange Reconstruction</b>							
<b>00606_</b>							
Capital Outlay Support							
BATA Funding		24.9	5.2	30.1	30.1	30.1	-
Non-BATA Funding		1.4	5.2	6.6	6.3	6.6	-
Subtotal		26.3	10.4	36.7	36.4	36.7	-
Capital Outlay Construction							
BATA Funding		54.7	26.9	81.6	77.1	81.6	-
Non-BATA Funding		21.6	-	21.6	21.7	21.6	-
Subtotal		76.3	26.9	103.2	98.8	103.2	-
<b>Total</b>		102.6	37.3	139.9	135.2	139.9	-
<b>I-680/Marina Vista Interchange Reconstruction</b>							
<b>00605_</b>							
Capital Outlay Support		18.3	1.8	20.1	20.1	20.1	-
Capital Outlay Construction		51.5	4.9	56.4	56.1	56.4	-
<b>Total</b>		69.8	6.7	76.5	76.2	76.5	-
<b>New Toll Plaza and Administration Building</b>							
<b>00604_</b>							
Capital Outlay Support		11.9	3.8	15.7	15.7	15.7	-
Capital Outlay Construction		24.3	2.0	26.3	25.1	26.3	-
<b>Total</b>		36.2	5.8	42.0	40.8	42.0	-
<b>Existing Bridge &amp; Interchange Modifications</b>							
<b>0060A_</b>							
Capital Outlay Support							
BATA Funding		4.3	13.5	17.8	17.6	17.8	-
Non-BATA Funding		-	0.9	0.9	0.8	0.9	-
Subtotal		4.3	14.4	18.7	18.4	18.7	-
Capital Outlay Construction							
BATA Funding		17.2	32.8	50.0	36.5	50.0	-
Non-BATA Funding		-	9.5	9.5	-	9.5	-
Subtotal		17.2	42.3	59.5	36.5	59.5	-
<b>Total</b>		21.5	56.7	78.2	54.9	78.2	-
<b>Other Contracts</b>							
<b>See note below</b>							
Capital Outlay Support		11.4	(2.3)	9.1	8.7	9.1	-
Capital Outlay Construction		20.3	3.3	23.6	17.3	23.6	-
Capital Outlay Right-of-Way		20.4	(0.1)	20.3	17.0	20.3	-
<b>Total</b>		52.1	0.9	53.0	43.0	53.0	-
Subtotal BATA Capital Outlay Support		155.7	28.9	184.6	184.0	184.6	-
Subtotal BATA Capital Outlay Construction		829.9	164.5	994.4	965.9	994.4	-
Subtotal Capital Outlay Right-of-Way		20.4	(0.1)	20.3	17.0	20.3	-
Subtotal Non-BATA Capital Outlay Support		1.4	6.2	7.6	7.2	7.6	-
Subtotal Non-BATA Capital Outlay Construction		31.7	9.5	41.2	31.8	41.2	-
Project Reserves		20.8	3.6	24.4	-	24.4	-
<b>Total New Benicia-Martinez Bridge Project</b>		<b>1,059.9</b>	<b>212.6</b>	<b>1,272.5</b>	<b>1,205.9</b>	<b>1,272.5</b>	<b>-</b>

Notes: Includes EA's 00601\_, 00603\_, 00605\_, 00606\_, 00608\_, 00609\_, 0060A\_, 0060C\_, 0060E\_, 0060F\_, 0060G\_, and 0060H\_ and all Project Right-of-Way

Note: Details may not sum to totals due to rounding effects.

## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) (Continued)

Project	EA Number	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (11/2009)	Cost To Date (11/2009)	Cost Forecast (11/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>Carquinez Bridge Replacement Project</b>							
<b>New Bridge</b>	<b>01301_</b>						
Capital Outlay Support		60.5	(0.3)	60.2	60.2	60.2	-
Capital Outlay Construction		253.3	2.7	256.0	255.9	256.0	-
<b>Total</b>		313.8	2.4	316.2	316.1	316.2	-
<b>Crockett Interchange Reconstruction</b>							
	<b>01305_</b>						
Capital Outlay Support		32.0	(0.1)	31.9	31.9	31.9	-
Capital Outlay Construction		73.9	(1.9)	72.0	71.9	72.0	-
<b>Total</b>		105.9	(2.0)	103.9	103.8	103.9	-
<b>Existing 1927 Bridge Demolition</b>							
	<b>01309_</b>						
Capital Outlay Support		16.1	(0.5)	15.6	15.6	15.6	-
Capital Outlay Construction		35.2	-	35.2	34.8	35.2	-
<b>Total</b>		51.3	(0.5)	50.8	50.4	50.8	-
<b>Other Contracts</b>							
	<b>See note below</b>						
Capital Outlay Support		15.8	1.2	17.0	16.3	17.0	-
Capital Outlay Construction		18.8	(1.2)	17.6	16.2	17.6	-
Capital Outlay Right-of-Way		10.5	(0.1)	10.4	9.9	10.4	-
<b>Total</b>		45.1	(0.1)	45.0	42.4	45.0	-
Subtotal BATA Capital Outlay Support		124.4	0.3	124.7	124.0	124.7	-
Subtotal BATA Capital Outlay Construction		381.2	(0.4)	380.8	378.8	380.8	-
Subtotal Capital Outlay Right-of-Way		10.5	(0.1)	10.4	9.9	10.4	-
Project Reserves		12.1	(9.8)	2.3	-	2.3	-
<b>Total Carquinez Bridge Replacement Project</b>		528.2	(10.0)	518.2	512.7	518.2	-

## Notes:

Other Contracts includes EA's 01301\_01302\_, 01303\_, 01304\_01305\_, 01306\_, 01307\_, 01308\_, 01309\_0130A\_, 0130C\_, 0130D\_, 0130F\_, 0130G\_, 0130H\_, 0130J\_, 00453\_, 00493\_, 04700\_, 00607\_, 2A270\_, and 29920\_ and all Project Right-of-Way

Note: Details may not sum to totals due to rounding effects.



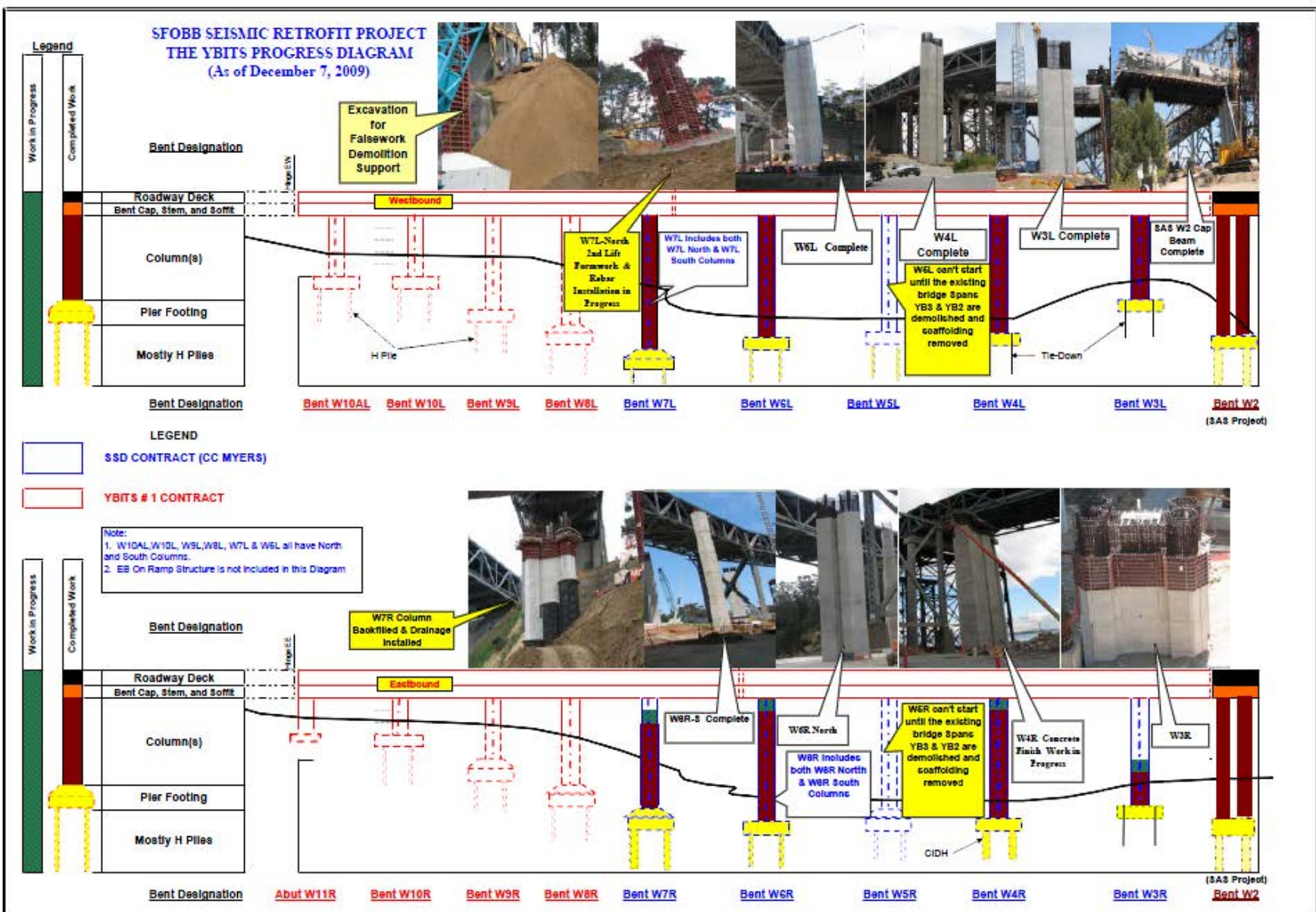
## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) (Continued)

Project a	EA Number b	BATA Budget (07/2005) c	Approved Changes d	Current Approved Budget (11/2009) e = c + d	Cost To Date (11/2009) f	Cost Forecast (11/2009) g	At- Completion Variance h = g - e
Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation			See note <sup>1</sup> below				
Capital Outlay Support							
BATA Funding		2.2	(0.8)	1.4	1.4	1.4	-
Non-BATA Funding		8.6	1.8	10.4	10.4	10.4	-
Subtotal		10.8	1.0	11.8	11.8	11.8	-
Capital Outlay Construction							
BATA Funding		40.2	(6.8)	33.4	33.3	33.4	-
Non-BATA Funding		51.1	-	51.1	51.1	51.1	-
Subtotal		91.3	(6.8)	84.5	84.4	84.5	-
Project Reserves		-	0.8	0.8	-	0.8	-
<b>Total</b>		<b>102.1</b>	<b>(5.0)</b>	<b>97.1</b>	<b>96.2</b>	<b>97.1</b>	<b>-</b>
<b>Rehabilitation</b>	<b>04152_</b>						
Capital Outlay Support							
BATA Funding		4.0	(0.7)	3.3	3.3	3.3	-
Non-BATA Funding		4.0	(4.0)	-	-	-	-
Subtotal		8.0	(4.7)	3.3	3.3	3.3	-
Capital Outlay Construction		16.9	(0.6)	16.3	16.3	16.3	-
Project Reserves		0.1	0.3	0.4	-	0.4	-
<b>Total</b>		<b>25.0</b>	<b>(5.0)</b>	<b>20.0</b>	<b>19.6</b>	<b>20.0</b>	<b>-</b>
<b>Richmond Parkway Project (RM 1 Share Only)</b>	<b>Non-Caltrans</b>						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay Construction		5.9	-	5.9	4.3	5.9	-
<b>Total</b>		<b>5.9</b>	<b>-</b>	<b>5.9</b>	<b>4.3</b>	<b>5.9</b>	<b>-</b>
<b>San Mateo-Hayward Bridge Widening</b>	<b>See note <sup>2</sup> below</b>						
Capital Outlay Support		34.6	(0.5)	34.1	34.1	34.1	-
Capital Outlay Construction		180.2	(6.1)	174.1	174.1	174.1	-
Capital Outlay Right-of-Way		1.5	(0.9)	0.6	0.5	0.6	-
Project Reserves		1.5	(0.5)	1.0	-	1.0	-
<b>Total</b>		<b>217.8</b>	<b>(8.0)</b>	<b>209.8</b>	<b>208.7</b>	<b>209.8</b>	<b>-</b>
<b>I-880/SR-92 Interchange Reconstruction</b>	<b>EA's 23317_, 01601_, and 01602_</b>						
Capital Outlay Support		28.8	34.6	63.4	50.7	63.4	-
Capital Outlay Construction							
BATA Funding		85.2	60.2	145.4	80.8	145.4	-
Non-BATA Funding		9.6	-	9.6	-	9.6	-
Subtotal		94.8	60.2	155.0	80.8	155.0	-
Capital Outlay Right-of-Way		9.9	7.0	16.9	11.9	16.9	-
Project Reserves		0.3	9.4	9.7	-	9.7	-
<b>Total</b>		<b>133.8</b>	<b>111.2</b>	<b>245.0</b>	<b>143.4</b>	<b>245.0</b>	<b>-</b>
<b>Bayfront Expressway Widening</b>	<b>EA's 00487_, 01511_, and 01512_</b>						
Capital Outlay Support		8.6	(0.2)	8.4	8.3	8.4	-
Capital Outlay Construction		26.5	(1.5)	25.0	24.9	25.0	-
Capital Outlay Right-of-Way		0.2	-	0.2	0.2	0.2	-
Project Reserves		0.8	(0.3)	0.5	-	0.5	-
<b>Total</b>		<b>36.1</b>	<b>(2.0)</b>	<b>34.1</b>	<b>33.4</b>	<b>34.1</b>	<b>-</b>
<b>US 101/University Avenue Interchange Modification</b>	<b>Non-Caltrans</b>						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay Construction		3.8	-	3.8	3.7	3.8	-
<b>Total</b>		<b>3.8</b>	<b>-</b>	<b>3.8</b>	<b>3.7</b>	<b>3.8</b>	<b>-</b>
<b>Subtotal BATA Capital Outlay Support</b>		<b>358.3</b>	<b>61.6</b>	<b>419.9</b>	<b>405.8</b>	<b>419.9</b>	<b>-</b>
<b>Subtotal BATA Capital Outlay Construction</b>		<b>1,569.8</b>	<b>209.3</b>	<b>1,779.1</b>	<b>1,682.1</b>	<b>1,779.1</b>	<b>-</b>
<b>Subtotal Capital Outlay Right-of-Way</b>		<b>42.5</b>	<b>5.9</b>	<b>48.4</b>	<b>39.5</b>	<b>48.4</b>	<b>-</b>
<b>Subtotal Non-BATA Capital Outlay Support</b>		<b>14.0</b>	<b>4.0</b>	<b>18.0</b>	<b>17.6</b>	<b>18.0</b>	<b>-</b>
<b>Subtotal Non-BATA Capital Outlay Construction</b>		<b>92.4</b>	<b>9.5</b>	<b>101.9</b>	<b>82.9</b>	<b>101.9</b>	<b>-</b>
<b>Project Reserves</b>		<b>35.6</b>	<b>3.5</b>	<b>39.1</b>	<b>-</b>	<b>39.1</b>	<b>-</b>
<b>Total RM1 Program</b>		<b>2,112.6</b>	<b>293.8</b>	<b>2,406.4</b>	<b>2,227.9</b>	<b>2,406.4</b>	<b>-</b>

Notes:

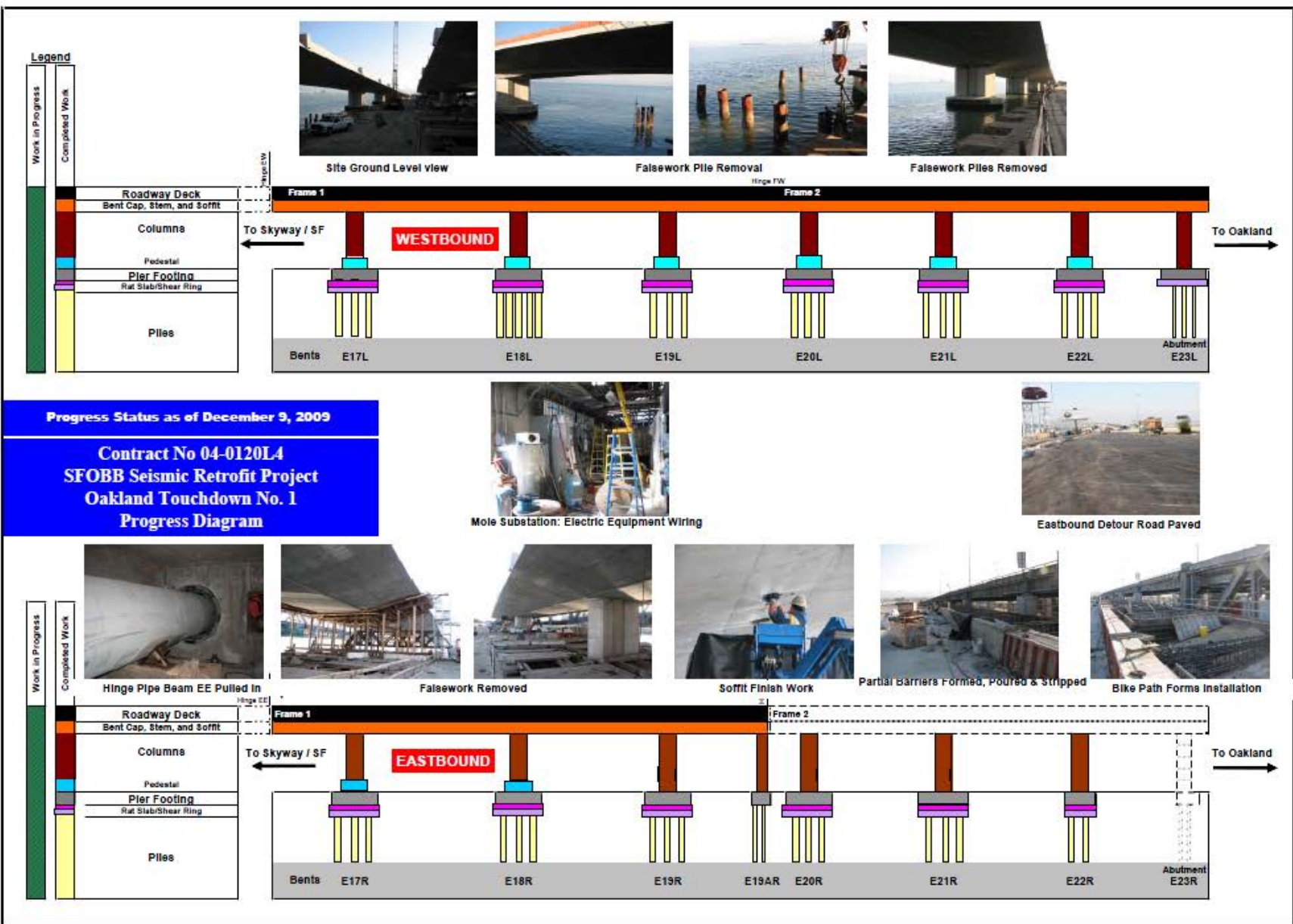
<sup>1</sup> Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation Includes Non-TBSRA Expenses for EA 0438U\_ and 04157\_<sup>2</sup> San Mateo-Hayward Bridge Widening Includes EA's 00305\_, 04501\_, 04502\_, 04503\_, 04504\_, 04505\_, 04506\_, 04507\_, 04508\_, 04509\_, 27740\_, 27790\_, 04860\_

Note: Details may not sum to totals due to rounding effects.





# Appendix E: OTD #1 Program Diagram





## Appendix F: Project Progress Photographs



## Appendix F: Project Progress Photographs

### Yerba Buena Island Detour



YBID Span YB3 Demolished and Removed



YBID Span YB4 Demolition in Progress





Existing Viaduct Bridge Spans Being Demolished to the Left and the Detour Structure to the Right







## Appendix F: Project Progress Photographs

### Self-Anchored Suspension Bridge Fabrication



SAS OBG Lift 11 Assembly in Bay 13



SAS Bearing Stiffener Being Fitted to the Lift 1 East Shaft





SAS Tower Overview of Heavy Duty Shop 1



SAS OBG 3W Being Loaded onto the Ship

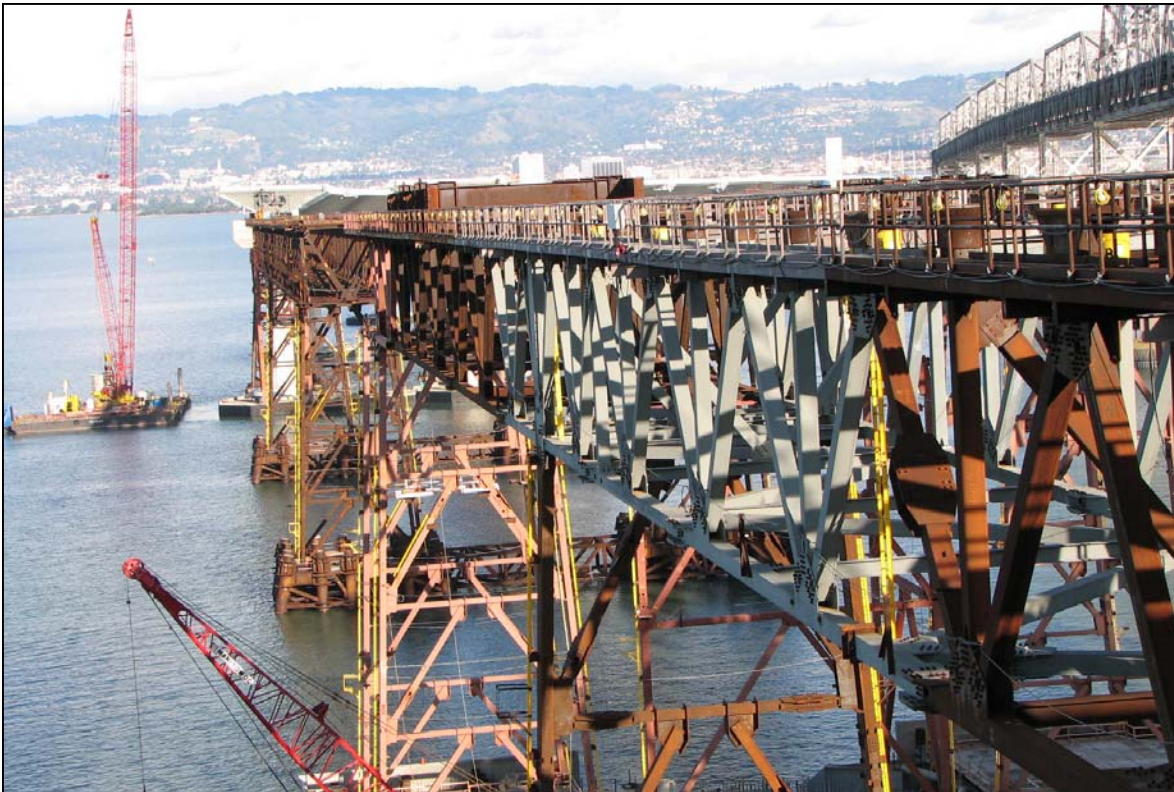


## Appendix F: Project Progress Photographs

### Self-Anchored Suspension Bridge Field Work

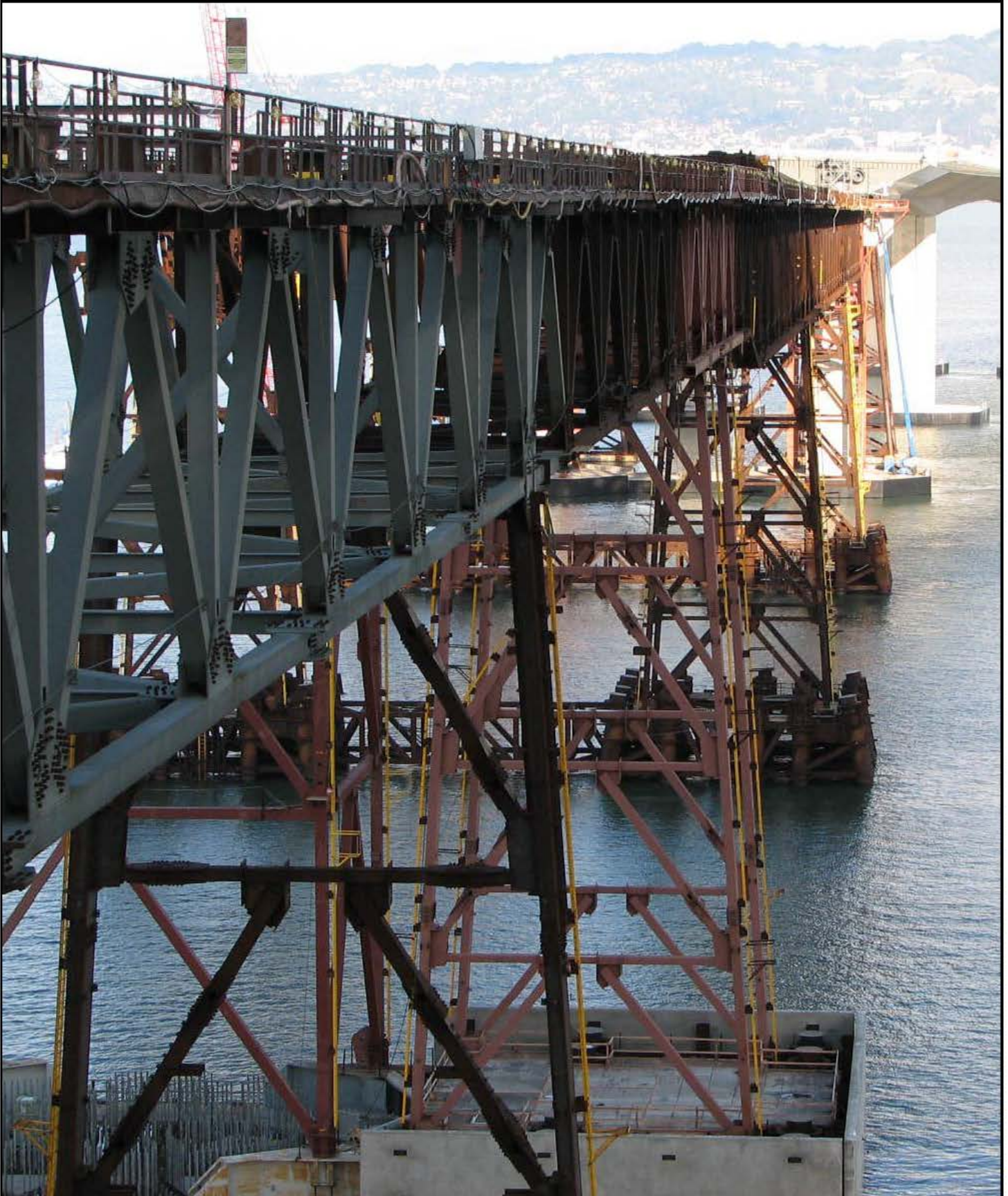


SAS - VieT1 Trestle Construction Overview



SAS Westbound Temporary Support Structures





SAS Eastbound Temporary Support Structures Looking East



## Appendix F: Project Progress Photographs

### Oakland Touchdown



Oakland Touchdown Falsework Removal



Oakland Touchdown Mole Substation Exterior





Oakland Touchdown Detour Paved



Oakland Touchdown Falsework Piles Removed

## Appendix F: Project Progress Photographs

### 92/880 Interchange



92/880 Widening at Mount Eden Overhead Crossing



92/880 Pump Station Construction in Progress





92/880 Site Preparation of New Route 92 and Interstate 880 Separator

## Appendix G: Glossary of Terms

**AB144/SB 66 BUDGET:** The planned allocation of resources for the Toll Bridge Seismic Retrofit Program, or subordinate projects or contracts, as provided in Assembly Bill 144 and Senate Bill 66, signed into law by Governor Schwarzenegger on July 18, 2005 and September 29, 2005, respectively.

**BATA BUDGET:** The planned allocation of resources for the Regional Measure 1 Program, or subordinate projects or contracts as authorized by the Bay Area Toll Authority as of June 2005.

**APPROVED CHANGES:** For cost, changes to the AB144/SB 66 Budget or BATA Budget as approved by the Bay Area Toll Authority Commission. For schedule, changes to the AB 144/SB 66 Project Complete Baseline approved by the Toll Bridge Program Oversight Committee, or changes to the BATA Project Complete Baseline approved by the Bay Area Toll Authority Commission.

**CURRENT APPROVED BUDGET:** The sum of the AB144/SB66 Budget or BATA Budget and Approved Changes.

**COST TO DATE:** The actual expenditures incurred by the program, project or contract as of the month and year shown.

**COST FORECAST:** The current forecast of all of the costs that are projected to be expended so as to complete the given scope of the program, project, or contract.

**AT COMPLETION VARIANCE or VARIANCE (cost):** The mathematical difference between the Cost Forecast and the Current Approved Budget.

**AB 144/SB 66 PROJECT COMPLETE BASELINE:** The planned completion date for the Toll Bridge Seismic Retrofit Program or subordinate projects or contracts.

**BATA PROJECT COMPLETE BASELINE:** The planned completion date for the Regional Measure 1 Program or subordinate projects or contracts.

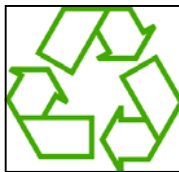
**PROJECT COMPLETE CURRENT APPROVED SCHEDULE:** The sum of the AB144/SB66 Project Complete Baseline or BATA Project Complete Baseline and Approved Changes.

**PROJECT COMPLETE SCHEDULE FORECAST:** The current projected date for the completion of the program, project, or contract.

**SCHEDULE VARIANCE or VARIANCE (schedule):** The mathematical difference expressed in months between the Project Complete Schedule Forecast and the Project Complete Current Approved Schedule.

**% COMPLETE:** % Complete is based on an evaluation of progress on the project, expenditures to date, and schedule.





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*The information in this report is provided in accordance with California Government code Section 755. This document is one of a series of reports prepared for the Bay Area Toll Authority (BATA)/Metropolitan Transportation Commission (MTC) for the Toll Bridge Seismic Retrofit and Regional Measure 1 Programs. The contract value for the monitoring efforts, technical analysis, and field site works that contribute to these reports, as well as the report preparation and production is \$1,574,873.73.*

**URS**



**Hatch Mott  
MacDonald**

**Bay Area Management Consultants**

An Association of URS Corporation and Hatch Mott MacDonald

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 30, 2009

**FR:** Ali Banani, Caltrans; Peter Lee, BATA, Dina Noel, CTC

**RE:** Agenda No. - 5a

Program Issues  
Item- TBSRP Capital Outlay Support Update

---

**Recommendation:**

TBD

**Cost:**

None

**Schedule Impacts:**

None

**Discussion:**

For FY 2009-10, the TBPOC has adopted a Capital Outlay Support (COS) budget of \$111.7M that assumed reductions from a reduced overhead rate, staffing reductions, elimination of liability insurance, and furloughs.

While the Department has achieved some savings from staffing reductions and the furloughs, COS expenditure forecast is trending significantly higher due primarily to additional costs associated with expanded QA in China, east-end detailing support, and savings that have not been realized. Based on estimated COS expenditures through December 31, 2009, the COS expenditures will exceed the budget by \$22.4M for a total of \$134.1M, unless action is taken to reduce staffing.

Staff has identified a number of areas to cut COS, but is still determining the impacts to the project of such cuts. Staff will present the potential reduction areas to the TBPOC at the January 7 meeting for discussion and possible action.

**Attachment(s):**

COS Update Presentation



# FY 09-10 COS Update

January 2010



THE SAN FRANCISCO-OAKLAND  
**BAY BRIDGE**  
SEISMIC SAFETY PROJECTS

## Toll Bridge Seismic Retrofit Program

CALTRANS

BAY AREA TOLL AUTHORITY

CALIFORNIA TRANSPORTATION COMMISSION

# **Toll Bridge Seismic Retrofit Program**

## **Agenda**

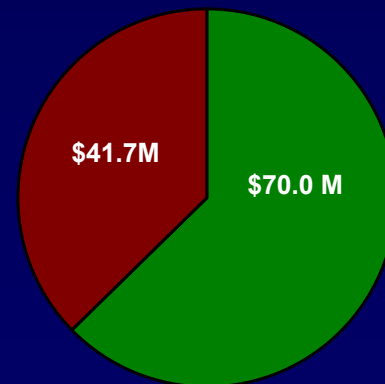
**FY 09-10 COS Cost Reduction Options**



# FY 09-10 Expenditures

Estimated As of December 31, 2009

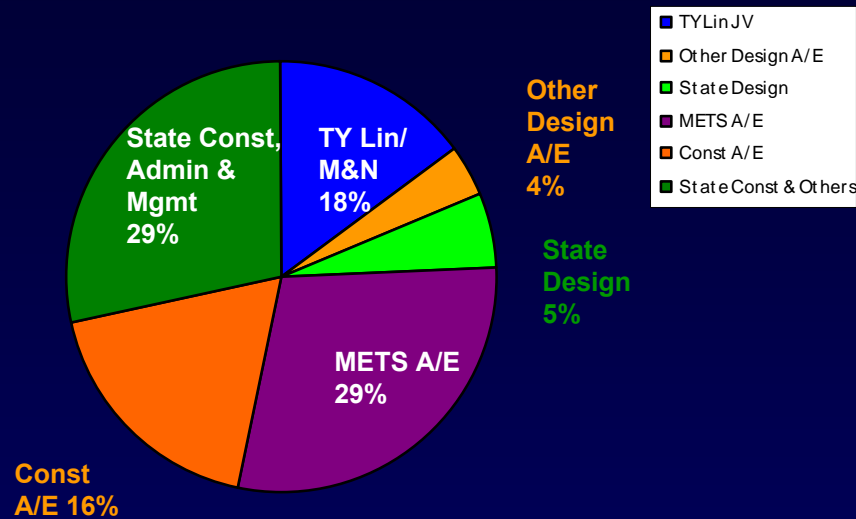
	<u>Total</u>	<u>State</u>	<u>A/E</u>
Expenditures	\$ 70.0 M	\$24.2 M	\$45.8 M
Estimated Remaining Budget	\$ 41.7 M		
TBPOC Budget	\$111.7 M		
Forecast	\$134.1 M		
Budget Shortfall	\$ 22.4 M (35%)		



■ Estimated Expenditures  
Thru Dec '09  
■ Remaining Budget

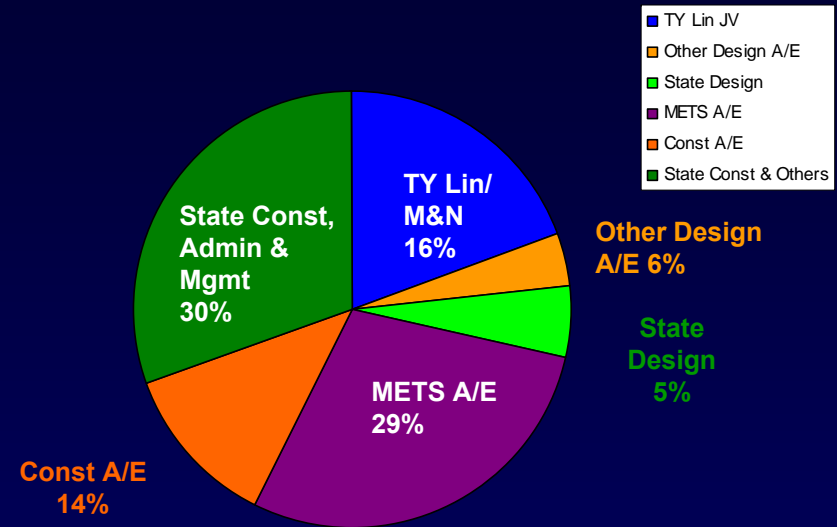
# Expenditure Analysis

Estimated Expenditures Jul – Dec 2009



TY Lin/ M&N	\$12.5 M
Other Design A/E	\$ 2.8 M
State Design	\$ 3.8 M
METS A/E	\$20.1 M
Const A/E	\$10.9 M
State Const & Others	\$19.9 M
<b>Total</b>	<b>\$70.0 M</b>

Estimated Expenditures Jan – Jun 2010



TY Lin/ M&N	\$10.5 M
Other Design A/E	\$ 3.5 M
State Design	\$ 3.4 M
METS A/E	\$18.3 M
Const A/E	\$ 8.9 M
State Const & Others	\$19.5 M
<b>Total</b>	<b>\$64.1 M</b>



# Expenditure Analysis

- **TY Lin/ M&N + METS A/E Comprise Approx 45- 50% of Expenditures**
- **Must Evaluate Design & METS Staffing To Obtain Meaningful Cost Reduction**

# Cost Reduction Options

Potential Reduction	Estimated Savings
Reduce 14 Construction State Staff	\$1.2 M
Staff To Take Furloughs By FY End	\$2.0 M
Reduce Claims & Scheduling Staff 50% From 12 FTE's	\$0.5 M
Reduce Structure Construction Support A/E	\$3.0 M
Reduce PIO Staff From 9 FTE's To 6 FTE's	\$0.3 M
Reduce METS A/E Staff in US By 12 FTE's (From 27 FTE's)	\$1.5 M
Reduce China METS A/E Staff By 21 FTE's ( From 93 FTE's)	\$3.0M
Reduce Other A/E Design Staff By 7 ( From 22-25 FTE's )	\$1.0 M
Reduce TY Lin/ M&N JV Staff By 25 ( From 90 FTE's )	\$3.2 M
Total	\$15.7 M



# Cost Reduction Options

Potential Reduction	Estimated Savings	Potential Impacts
Reduce 14 Construction State Staff	\$1.2 M	Staff Reduced in Dec 2009
Staff To Take Furloughs By FY End	\$2.0 M	Some Staff May Not Be Available When Needed
Reduce Claims & Scheduling Staff 50% From 11 FTE's	\$0.5 M	Insufficient Analysis May Result In Higher CO Cost
Reduce Structure Construction Support A/E	\$3.0 M	Delivery Schedule For SAS OBG's Reduces Staff Need
Reduce PIO Staff From 9 FTE's To 6 FTE's	\$0.3 M	Fewer PR Events, Tours
Reduce METS A/E Staff in US By 12 FTE's (From 27 FTE's)	\$1.5 M	Insufficient Construction QA, Materials Research & Testing
Reduce China METS A/E Staff By 21 FTE's ( From 93 FTE's)	\$3.0M	Inadequate QA, Potential For Further Shipment Delays
Reduce Other A/E Design Staff By 7 ( From 22-25 FTE's )	\$1.0 M	Project Delays if Current Staffing Levels Appropriate
Reduce TY Lin/ M&N JV Staff By 25 ( From 90 FTE's )	\$3.2 M	Project Delays if Current Staffing Levels Appropriate
Total	\$15.7 M	

# TYLin/M&N JV Current Resources (FTE)

	<u>SAS</u>	<u>YBID</u>	<u>YBITS</u>	<u>OTD</u>
Team China	2			
Team OBG	2			
Team Tower	2			
Team Cable	2			
CERM	1/4			
Team Temporary Tower	1/4			
Team Computer	4			
Team Concrete	1/4			
Team MEP	1/4			
Team ISD	2			
Team OBG Shop Drawings	26			
Team Tower Shop Drawings	3			
Team CAD	4			
Document Control	2			
Team Fabrication	2			
Team Fit-For-Purpose	2			
Team Construction Engineering	1/4			
Overtime	12			
Admin and Project Management	5			
SAS Management	2			
<u>Non-SAS Design</u>	<u>0</u>	<u>3</u>	<u>10</u>	<u>4</u>
<b>Total :</b>	<b>73</b>	<b>3</b>	<b>10</b>	<b>4</b>



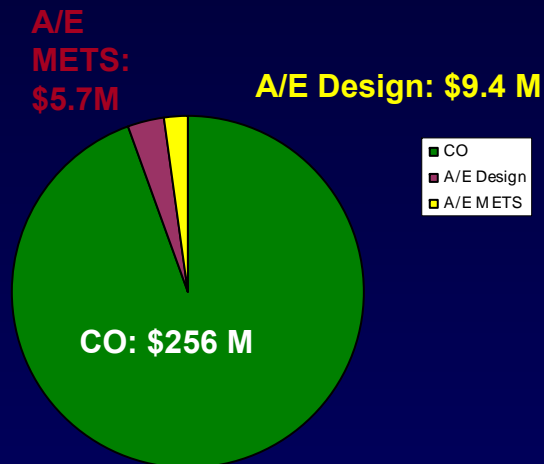
# METS CALTROP RESOURCES(FTE)

	SAS				YBI Detour		OTD #1		
	Insp	Eng	Surv	Admin	Insp	Engr	Insp	Engr	
Pier 7 (Other)	-	-	-	-	1	1	0.5	0.5	
Pier7 (F4)	4.5	5	-	6					
Pier 7 (East End)	3	1.5	-	-					
China	73.8	7.5	5.4	6					
Japan	1	1							
Korea	1.2								
UK	2								
OH/MO	2								
OR	2								
	89.5	15	5.4	12	1	1	0.5	0.5	Σ = 125

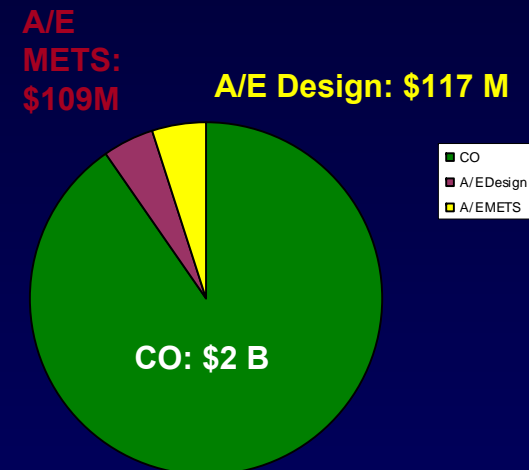
# Construction Support Design & METS A/E Comparisons

## SAS Vs New Carquinez Bridge

**Carquinez  
Actual Dollars**



**SAS  
Estimated Dollars**



	A/E Design % CO	A/E METS % CO
Carquinez Bridge	3.7%	2.2%
SAS	5.8%	5.5%

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 30, 2009

**FR:** Tony Anziano, Toll Bridge Program Manager, Caltrans

**RE:** Agenda No. - 6a1

Item- San Francisco-Oakland Bay Bridge Updates  
Yerba Buena Island Detour Update

---

**Recommendation:**

For Information Only

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

A verbal update on the Yerba Buena Island Detour contract will be provided at the January 7<sup>th</sup> meeting.

**Attachment(s):**

N/A



## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee      **DATE:** December 30, 2009  
(TBPOC)

**FR:** Brian Maroney, Toll Bridge Deputy Program Manager, Caltrans

**RE:** Agenda No. - 6a2  
San Francisco-Oakland Bay Bridge Updates  
Item- Yerba Buena Island Detour  
S-Curve Update

---

**Recommendation:**

For Information Only

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

A verbal update on the S-curve will be provided at the January 7<sup>th</sup> meeting.

**Attachment(s):**

N/A

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 30, 2009

**FR:** Tony Anziano, Toll Bridge Program Manager, Caltrans

**RE:** Agenda No. - 6b1

Item- San Francisco-Oakland Bay Bridge Updates  
Yerba Buena Island Transition Structures No. 1 Update

---

**Recommendation:**

For Information Only

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

A verbal update on the Yerba Buena Island Transition Structures No. 1 contract will be provided at the January 7<sup>th</sup> meeting.

**Attachment(s):**

N/A

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 30, 2009

**FR:** Tony Anziano, Toll Bridge Program Manager, Caltrans

**RE:** Agenda No. - 6b2

Item- San Francisco-Oakland Bay Bridge Updates  
Yerba Buena Island Transition Structures No. 1 Budget Approval

---

**Recommendation:**

**APPROVAL**

**Cost:**

\$144 million

**Schedule Impacts:**

N/A

**Discussion:**

Bids were opened on December 15, 2009 for the Yerba Buena Island Transition Structure (YBITS) Contract 1. There were three bidders, MCM Construction (\$80,775,457), CC Myers Inc (\$85,555,555), and Flatiron West Inc (\$86,645,490). The low bid amount is 39.93% below the Engineer's estimate of \$134,458,978.

The low bid was reviewed and was found neither mathematically nor materially unbalanced. MCM Construction confirmed that they were satisfied with their bid. Recommendation was made to award the contract to the lowest responsible bidder, MCM Construction.

It is requested that \$144 million be allocated as a budget for the YBITS 1 Contract. The requested budget is based on the low bid of \$80,775,457; the Supplemental Work of \$20,917,500; and the State Furnished Materials of \$13,288,501. The subtotal of these three items is \$114,981,458. With a 25% contingency, the total estimate is \$143,726,822.

**Attachment(s):**

N/A



## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 30, 2009

**FR:** Tony Anziano, Toll Bridge Program Manager, Caltrans

**RE:** Agenda No. - 6c1  
Item- San Francisco-Oakland Bay Bridge Updates  
Oakland Touchdown No. 1 Update

---

**Recommendation:**

For Information Only

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

A verbal update on the Oakland Touchdown No. 1 contract will be provided at the January 7<sup>th</sup> meeting.

**Attachment(s):**

N/A

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee      **DATE:** December 30, 2009  
(TBPOC)

**FR:** Brian Maroney, Toll Bridge Deputy Program Manager, Caltrans

**RE:** Agenda No. - 7

Item- Eyebars Repair Update

---

**Recommendation:**

For Information Only

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

A verbal update on the eyebars repair will be provided at the January 7<sup>th</sup> meeting.

**Attachment(s):**

N/A

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** December 30, 2009

**FR:** Jason Weinstein, Senior Program Coordinator, BATA

**RE:** Agenda No. - 8a  
Item- Antioch and Dumbarton Seismic Retrofit Contracts  
Delivery Schedule Updates

---

**Recommendation:**  
**APPROVAL**

**Cost:**  
N/A

**Schedule Impacts:**  
N/A

**Discussion:**

Over the last two years, BATA and the Department have been working swiftly to produce plans, specifications, and estimates for the seismic retrofit of the Antioch and Dumbarton Bridges. To date, BATA has funded this effort with Toll Bridge Rehabilitation funds and continues to fully support the expedited delivery of both projects.

With Governor Schwarzenegger's approval of Assembly Bill 1175 (AB1175) on October 11, 2009, both the Antioch and Dumbarton bridge retrofit projects will be part of the Toll Bridge Seismic Retrofit Program on January 1, 2010.

In July 2009, staff presented an update to the TBPOC which included project delivery schedules. The schedules indicated there would be 3-month delays to each project due to challenges with obtaining environmental permits. In September 2009, staff again presented the same project delivery schedules, which are attached for your reference. It appeared, at that time, that the schedules shown in the "current" column could be obtained.

Subsequently, the Antioch project was ready to list on November 23, 2009 and was advertised on December 21, 2009 which is on target with the attached "current" schedule.



## *Memorandum*

There was a clerical error when the Antioch project was advertised that has the current bid opening date listed as February 2, 2010. This date should be changed to March 10, 2010, to allow ample time for bidding and to be consistent with the attached schedule.

The Dumbarton project, however, will not meet the “current” schedule. It is currently trending toward the “contract for delivery” schedule. These dates are cause for some concern, as all of the environmental permitting challenges have been cleared and the ball is back in the Department and BATA’s courts. The remaining items of work require checking of plan sheets and their accompanying specifications.

While there is concern for the Dumbarton contract delivery date, there is less concern about the environmental window, as the Department has gotten permission to install temporary piles year-round when employing a vibratory technique.

One issue that could affect the Dumbarton projects delivery date is the concrete collars which are part of the current design. There is some debate between the Designers and the Toll Bridge Seismic Peer Review Panel as to the need for this element of the retrofit. Once this scope of work issue is resolved, then a decision on how to handle any change of the current design documents, if required, will be brought to a future TBPOC for discussion.

Staff requests that the TBPOC adopt the following contract delivery schedules for the Antioch and Dumbarton projects:

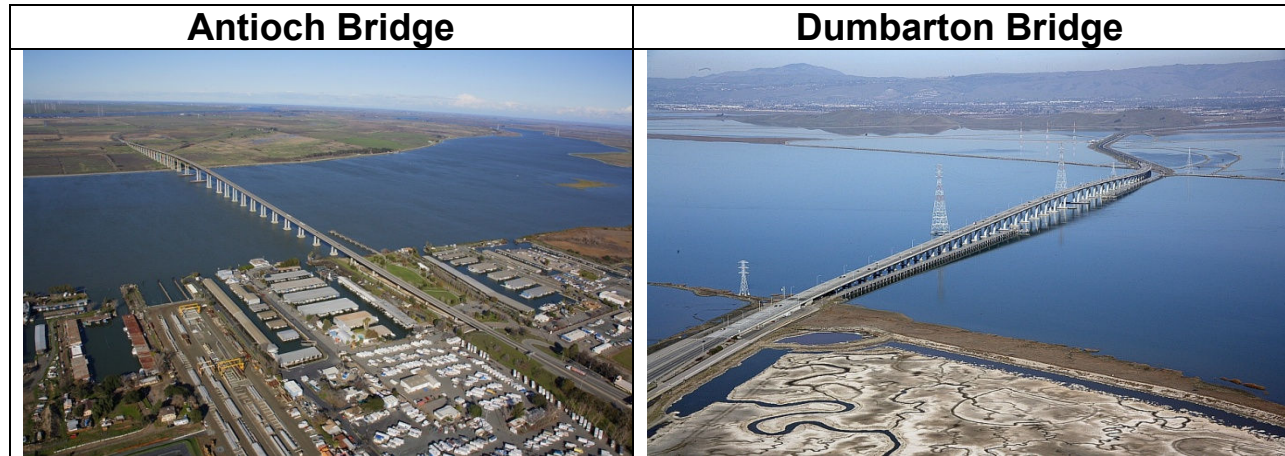
- “current” schedule dates for the Antioch contract
- “contract for delivery” schedule dates for the Dumbarton contract

Staff also requests that the TBPOC authorize issuing an addendum to change the bid opening date for the Antioch project from February 2, 2010 to March 10, 2010.

**Attachment(s):**

Antioch / Dumbarton Delivery Schedule (9/09)

## Antioch/Dumbarton Delivery Schedule (9/14/09)



Description	Antioch Plan		Dumbarton Plan	
	<u>Current</u>	<u>Contract for Delivery</u>	<u>Current</u>	<u>Contract for Delivery</u>
<b>PA &amp; ED</b>	<b>01Jul09</b>	<b>15Aug09</b>	<b>01Jul09</b>	<b>15Aug09</b>
<b>Draft Structural PS&amp;E</b>	<b>01Jun09A</b>	<b>01Jun09A</b>	<b>01Jun09A</b>	<b>01Jun09A</b>
<b>Final Structural PS&amp;E</b>	<b>02Jul09A</b>	<b>02Jul09A</b>	<b>02Jul09A</b>	<b>02Jul09A</b>
<b>PS&amp;E to HQOE</b>	<b>03Aug09A</b>	<b>03Aug09A</b>	<b>03Aug09A</b>	<b>03Aug09A</b>
<b>Ready to List (RTL)</b>	<b>20Nov09</b>	<b>01Mar10</b>	<b>20Nov09</b>	<b>01Mar10</b>
<b>Advertise</b>	<b>14Dec09</b>	<b>31Mar10</b>	<b>14Dec09</b>	<b>31Mar10</b>
<b>Bid Opening</b>	<b>10Mar10</b>	<b>30Jun10</b>	<b>10Mar10</b>	<b>30Jun10</b>
<b>Award</b>	<b>14Apr10</b>	<b>05Aug10</b>	<b>14Apr10</b>	<b>05Aug10</b>

\*

Antioch Environmental Work Window – August to October

\*\*

Dumbarton Environmental Work Window – June 15 - November

## **ITEM 9: OTHER BUSINESS**

No Attachments